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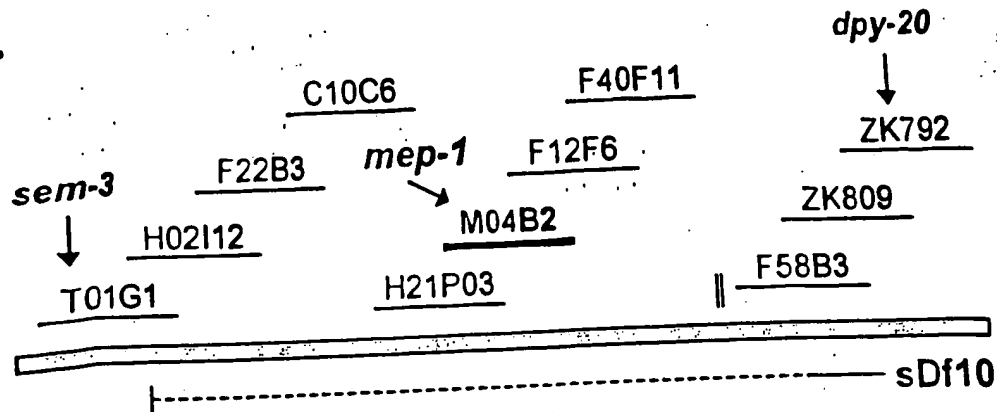
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FIGURE 1

A.



B.

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M V T A D E T V L A T T T N T T S M S V E P T D P R S A G E 30
S S S D S E P D T I E Q L K A E Q R E V M A D A A N G S E V 60
N G N Q E N G K E E A A S A D V E V I E I D D T E E S T D P 90
S P D G S D E N G D A A S T S V P I E E E A R K K D E G A S 120
E V T V A S S E I E Q D D D G D V M E I T E E P N G K S E D 150
T A N G T V T E E V L D E E E P E P S V N G T T E I A T E K 180
E P E D S S M P V E Q N G K G V K R P V E C I E L D D D D D 210
D E I Q E I S T P A P A K K A K I D D V K A T S V P E E D N 240
N E Q A Q K R L L D K L E E Y V K E Q K D Q P S S K S R K V 270
L D T L L G A I N A Q V Q K E P L S V R K L I L D K V L V L 300
P N T I S F P P S Q V C D L L I E H D P E M P L T K V I N R 330
M F G E E R P K L S D S E K R E R A Q L K Q H N P V P N M T 360
K L L V D I G Q D L V Q E A T Y C D I V H A K N L P E V P K 390
N L E T Y K Q V A A Q L K P V W E T L K R K N E P Y K L K M 420
H R G G V G G G G G G G G G G G G G G G G G G G G G G G 450
Q G G G G G G G G G G G G G G G G G G G G G G G G G G G 480
E K E S K Y P C A I C E E D F N F K G V R E Q H Y K Q C K K 510
D Y I R I R N I M M P K Q D D H L Y I N R W L W E R P Q L D 540
P S I L Q Q Q Q Q A A L Q Q A Q Q K K Q Q Q L L H Q Q Q A A 570
Q A A A A A Q L L R K Q Q L Q Q Q Q Q Q Q Q Q A R L R E Q Q Q 600
A A Q F R Q V A Q L L Q Q Q S A Q A Q R A Q Q N Q G N V N H 630
N T L I A A M Q A S L R R G G Q Q G N S L A V S Q L L Q K Q 660
M A A L K S Q Q G A Q Q L Q A A V N S M R S Q N S Q K T P T 690
H R T P T F V G G G G G G G G G G G G G G G G G G G G G G 720
Q M V G K V L Q D M S Q G A P L A G S R R G R R D A T L W A T E S 750
L E R H L V M S H I G L V T A D L L L K A Q K K E D G G R I C K 780
T G G K N E A T E N M L G H L V A D H I Q V K L C S A E I M Y S 810
G D V G A E F K G C S S Y G T L E A H L T S N H P K G D K K T S 840
T P A K K D D C I T L D D 853

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Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE LET-60 RAS SIGNALING

Applicant(s): Horvitz et al.

Filing Date: September 12, 2003 Serial No.: N/A

Page 1 of 91

Customer No.: 21559

FIGURE 2

*mep-1* genomic sequence

TCACACACTCATGACATACACACATCATTTTCGCCTCACACACCGCGCCGTCCG  
 CCATCCGCACCGCCCGGGTGGGACGTGTTCAAACCTTTTCGGTTTTTCGTAAT  
 TAATAGTGAGCCCCGGTTTATTTCGCTTGAGAATCAGTATAATGGATATATC  
 AGATTGTGTAATTAGGTTGCGTGCTTGAACCTTTTAAAATTAACGTGTTTTAAAT  
 TTATCTGCCTTTATCGTTACAGTAAATCATTTTGATGAACCTTTTCGGATGAAT  
 CATAATGAAGTACGCAGCGCTCTAACAAAATGTGTTTGTAAATTCGAATTGC  
 TACAAGTTGCCCGGCTTATTTTTGGTGATTGAAGCATGATTCTGTTGACGC  
 TCCCGACGCGGAATACCAGGACGGACCGATGAGAGAGTACTGCCAGTGAA  
 GAGACGCATGCGAGCAGGACGAGTGCTGCTCACCTTCTTCTCAGCGTCG  
 GCGGCTGCGACCAGCGGCCGAGGAAGGGGAGGAGAGAGGCCGATTGGC  
 TCGGTACCACGTTTGATACTCAGTCACTTACCACAGCTGGTTCTCTTGTCG  
 TTCAAATCTGGCTTGCCGCGCGCGCGCATTTTATTCTACCAGTTTGAATCT  
 CCCACCTCTCCGACTGTAACGTGCTAATTTGCTTCCTTCTCATCACTCTCTC  
 TTTGCCATTCTCTCACTATCTAGACTCTATTTTTCCAGATGTCACCGCCGA  
 CGAGACGGTACTCGCCACAACGACCAACACCACTTCCATGTCTGTGGAACC  
 AACGGATCCGAGAAGCGCTGGTGAATCGTCTCAGATTCCGGAGCCAGACA  
 CAATTGAGGTGAGGAAAAGTTTTGGGAATTTAAATCTGAATAAAACGTTTTCA  
 GCAGCTGAAGGCAGAACAGCGCGAAGTGATGGCCGACGCGCGCAATGGTT  
 CCGAAGTCAACGGAATCAAGAGAACGGAAGAGGAAGCGGCATCTGCA  
 GACGTGGAAGTGATCGAGATAGATGACACCGAAGAGTCTACGGATCCCTCA  
 CCTGATGGATCTGATGAAAACGGTGATGCTGCATCTACATCGGTTCCAATC  
 GAAGAGGAAGCGCGTAAAAAGGATGAGGGGGCTTCCGAAGTGAAGTGTGGC  
 ATCATCTGAGATTGAACAAGACGATGATGGCGATGTTATGGAAATCACTGAG  
 GAGCCGAACGGAAAGTCCGGAGGATACTGCCAACGGAAACAGGTGTGTTTTAT  
 AATTTTACCAAGTTTAATTTTAACTTTCTATTTTCAGTTACTGAGGAGGTGCTA  
 GATGAAGAGGAGCCAGAACCTTCCGTAAACGGAAACAACTGAGATCGCTACA  
 GAGAAAGAGCCAGAAGATTCTTCAATGCCTGTGCAACAGAATGGGAAGGGT  
 GTGAAGCGGCCTGTGCAATGCATCGAACTCGACGACGACGATGATGACGA  
 GATTCAGGAAATTTCTACCCCTGCCCCAGCTAAAAAAGCTAAAATTGATGAT  
 GTCAAGGCGACAAGCGTTCCAGAAGAGGACAACAATGAGCAGGCGCAGAA  
 GAGATTGCTCGACAAGCTGGAAGAGTATGTGAAGGAGCAGAAGGATCAACC  
 ATCCAGCAAAAGCCGAAAAGTTCTGGACACTCTTCTCGGAGCAATCAATGC  
 GCAAGTTCAAAGGAGCCTCTGTGCGTTCCGAAGCTGATCCTGGACAAAGT  
 TCTCGTTCTCCCAAACACAATATCATTTCCACCAAGTCAAGTTTGCGACTTAT  
 TGATTGAGCAGATCCCGAAATGCCTTTGACGAAGGTTATCAACAGGATGTT  
 TGGAGAAGAAAGACCAAAGTTGAGTGATTCCGAGAAACGAGAGAGAGCTCA  
 GCTGAAACAACATAATCCTGTTCCAAATATGACAAAACCTGCTCGTGGACATT  
 GGACAGGATCTCGTTCAAGAAGCTACCTATTGTGATATAGTTTACGCGGAAGA  
 ATCTTCCAGAGGTGCCAAAAAATCTTGAAACCTATAAGCAAGTCGCTGCGCA  
 GTTGAAACCAGTTTGGGAGACATTGAAACGCAAAAATGAGGCGTACAAGTT  
 GAAAATGCATCGATGCGACGTCTGTGGATTCCAGACGGAATCAAAGCTGGT  
 TATGAGCACTACAAGGAGAATTTGCACTTACAGGATCCAAATTCCAGTGC  
 ACCATGTGTAAAGAGACGGACACGAGTGAGCAAAGAATGAAGGATCACTAC  
 TTGTAAGTTTTTTTTTTTTCATCTTTCAATATTCATTTAATTACAGCGAAACTC  
 ATCTTGTTATTGCAAAATCGGAAGAGAAGGAGTCCAAGTATCCATGTGCAAT

FIGURE 2

CTGCGAAGAAGACTTCAATTTCAAAGGTGTCGGTGAGCAGCATTACAAGCA  
GTGCAAGAAGGACTACATTCGCATTCGAAACATCATGATGCCGAAGCAAGA  
CGATCATCTCTATATCAACAGATGGCTCTGGGAGAGGCCCAATTGGATCC  
CAGCATTCTTCAACAGCAGCAACAAGCTGCTCTTCAGCAAGCTCAACAAAAG  
AAGCAACAGCAACTTCTGCATCAACAGCAAGCAGCACAAGCTGCAGCCGCT  
GCGCAACTCTTACGGAAGCAACAATTACAACAGCAACAACAACAGCAACAG  
GCTCGTCTTCGTGAGCAACAGCAAGCGGCCCAATTCCGGCAAGTGGCTCAA  
CTGCTGCAACAACAATCAGCGCAGGCTCAACGTGCACAGCAGAATCAAGGA  
AATGTGAATCATAACACTCTGATTGCAGGTAATAGCTAAACATATTTTAAATA  
AGTATTTTGTATAATTATTTATATTTTCAGCAATGCAAGCGTCGTTGCGTAGAG  
GTGGTCAACAAGGAAATTCGCTGGCAGTTTCTCAACTTCTCCAAAAGCAAAT  
GGCAGCTTTGAAGTCGCAACAAGGAGCTCAACAACCTCAGGCTGCGGTGAA  
CTCCATGAGAAGCCAGAACAGTCAAAAGACGCCAACACACAGAAGTTCGAA  
ACTTGTTACTACGCCGTCTCATGCTACTGTTGGCTCTTCTTCAGCTCCCACG  
TTTGTATGCGAAATTTGTGATGCGTCAGTGCAGGAAAAGGAGAAGTATCTAC  
AGCATCTTCAGGTAATTTTAAGAAACGTTTCTATTTCAATTTCAAACCGATT  
ATTAATATCTTAACATCACATTTTCAGACTACTCATAAGCAGATGGTTGGA  
AAAGTGCTGCAGGACATGTCGCAAGGAGCTCCACTGGCATGTTCTCGATGC  
CGTGACAGATTCTGGACTTATGAAGGGTTGGAGCGGCACTTGGTGATGTCG  
CATGGTCTCGTCACTGCTGATCTGCTCCTCAAAGCGCAAAAGAAGGAAGAC  
GGAGGTGATGCAAGACATGCGGCAAGAACTATGCGTTCAACATGCTTCAA  
CACTTGGTAGCTGATCATCAAGTGAAGTTGTGCTCGGCTGAAATCATGTACT  
CGTGCGATGTGTGCGCGTTCAAATGCTCGAGTTATCAGACTCTGGAAGCCC  
ATCTCACTTCAAATCACCCAAAAGGAGATAAGAAGACATCAACACCAGCAAA  
AAAAGATGATTGTATTACTCTGGATGATTAAATAGGAAAACGAATGGCTTATC  
CCGTTCTACGAATGAGTGCTGGAAACATTCTTACAATGATCTCAATTATTTT  
TCTTATTCTTTACATTCAATCATTTTAAATCACCAAGTTCTCCCACTTTCATTGA  
TATACACATTCTATTGCGGGTTCCGGAACCGAAATCAATCAGTACTTTACTTT  
ATTTCCCAATTTTTCTCTTCATGATATCTGGTTTATTCTCGCATCTTCCCCTA  
CCTTCAAAACTCCCTATTTTTTTTTTCAAACCTAACTACCCCAACAATTATCATG  
TAAATCAAATTGCAATCCCCATAAGACAGATCAGTATACACTTTCACTTCA  
TACGTCTGTTGTTCTCCCCATCTCATACTTTTTTACCATTGTCCAGTTAA  
GATTTTGAAGATATCTAT

FIGURE 3

*mep-1* ORF

ATGGTCACCGCCGACGAGACGGTACTCGCCACAACGACCAACACCACTTCC  
 ATGTCTGTGGAACCAACGGATCCGAGAAGCGCTGGTGAATCGTCCTCAGAT  
 TCGGAGCCAGACACAATTGAGCAGCTGAAGGCAGAACAGCGCGAAGTGAT  
 GGCCGACGCGGCGAATGGTTCCGAAGTCAACGGAAATCAAGAGAACGGAA  
 AAGAGGAAGCGGCATCTGCAGACGTGGAAGTGATCGAGATAGATGACACC  
 GAAGAGTCTACGGATCCCTCACCTGATGGATCTGATGAAAACGGTGATGCT  
 GCATCTACATCGGTTCCAATCGAAGAGGAAGCGCGTAAAAAGGATGAGGGG  
 GCTTCCGAAGTGAATGTGGCATCATCTGAGATTGAACAAGACGATGATGGC  
 GATGTTATGGAAATCACTGAGGAGCCGAACGGAAAGTCGGAGGATACTGCC  
 AACGGAACAGTTACTGAGGAGGTGCTAGATGAAGAGGAGCCAGAACCCTTCC  
 GTAAACGGAACAACCTGAGATCGCTACAGAGAAAGAGCCAGAAGATTCTTCA  
 ATGCCTGTCGAACAGAATGGGAAGGGTGTGAAGCGGCCTGTCGAATGCAT  
 CGAACTCGACGACGACGATGATGACGAGATTCAGGAAATTTCTACCCCTGC  
 CCCAGCTAAAAAAGCTAAAATTGATGATGTCAAGGCGACAAGCGTTCCAGA  
 AGAGGACAACAATGAGCAGGCGCAGAAGAGATTGCTCGACAAGCTGGAAG  
 AGTATGTGAAGGAGCAGAAGGATCAACCATCCAGCAAAAGCCGAAAAGTTC  
 TGGACACTCTTCTCGGAGCAATCAATGCGCAAGTTCAAAGGAGCCTCTGT  
 CGGTTCGGAAGCTGATCCTGGACAAAGTTCTCGTTCTCCCAAACACAATATC  
 ATTCCCACCAAGTCAAGTTTGGCACTTATTGATTGAGCACGATCCCGAAATG  
 CCTTTGACGAAGGTTATCAACAGGATGTTTGGAGAAGAAAGACCAAAGTTGA  
 GTGATTCCGAGAAACGAGAGAGAGCTCAGCTGAAACAACATAATCCTGTTCC  
 CAAATATGACAAAACCTGCTCGTGGACATTGGACAGGATCTCGTTCAAGAAG  
 CTACCTATTGTGATATAGTTCACGCGAAGAATCTTCCAGAGGTGCCAAAAAA  
 TCTTGAAACCTATAAGCAAGTCGCTGCGCAGTTGAAACCAGTTTGGGAGAC  
 ATTGAAACGCAAAAATGAGCCGTACAAGTTGAAAATGCATCGATGCGACGT  
 CTGTGGATTCCAGACGGAATCAAAGCTGGTTATGAGCACTCACAAGGAGAA  
 TTTGCACTTCACAGGATCCAAATTCCAGTGCACCATGTGTAAAGAGACGGAC  
 ACGAGTGAGCAAAGAATGAAGGATCACTACTTCGAAACTCATCTTGTTATTG  
 CAAAATCGGAAGAGAAGGAGTCCAAGTATCCATGTGCAATCTGCGAAGAAG  
 ACTTCAATTTCAAAGGTGTCCGTGAGCAGCATTACAAGCAGTGCAAGAAGG  
 ACTACATTCGCATTGAAACATCATGATGCCGAAGCAAGACGATCATCTCTA  
 TATCAACAGATGGCTCTGGGAGAGGGCCCAATTGGATCCAGCATTCTTCA  
 ACAGCAGCAACAAGCTGCTCTTCAGCAAGCTCAACAAAAGAAGCAACAGCA  
 ACTTCTGCATCAACAGCAAGCAGCACAAGCTGCAGCCGCTGCGCAACTCTT  
 ACGGAAGCAACAATTACAACAGCAACAACAACAGCAACAGGCTCGTCTTCG  
 TGAGCAACAGCAAGCGGCCCAATTCCGGCAAGTGGCTCAACTGCTGCAACA  
 ACAATCAGCGCAGGCTCAACGTGCACAGCAGAATCAAGGAAATGTGAATCA  
 TAACACTCTGATTGCAGCAATGCAAGCGTCGTTGCGTAGAGGTGGTCAACA  
 AGGAAATTCGCTGGCAGTTTCTCAACTTCTCCAAAAGCAAATGGCAGCTTTG  
 AAGTCGCAACAAGGAGCTCAACAACCTTCAGGCTGCGGTGAACTCCATGAGA  
 AGCCAGAACAGTCAAAGACGCCAACACACAGAACTCCCACGTTTGTATGC  
 GAAATTTGTGATGCGTCAGTGCAGGAAAAGGAGAAGTATCTACAGCATCTTC  
 AGACTACTCATAAGCAGATGGTTGGAAAAGTGCTGCAGGACATGTCGCAAG  
 GAGCTCCACTGGCATGTTCTCGATGCCGTGACAGATTCTGGACTTATGAAG  
 GGTTGGAGCGGCACTTGGTGATGTCGCATGGTCTCGTCACTGCTGATCTGC

Title: RB PATHWAY AND CHROMATIN REMODELING  
 GENES THAT ANTAGONIZE *LET-60* RAS SIGNALING

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Filing Date: September 12, 2003 Serial No.: N/A

Page 4 of 91

Customer No.: 21559

FIGURE 3

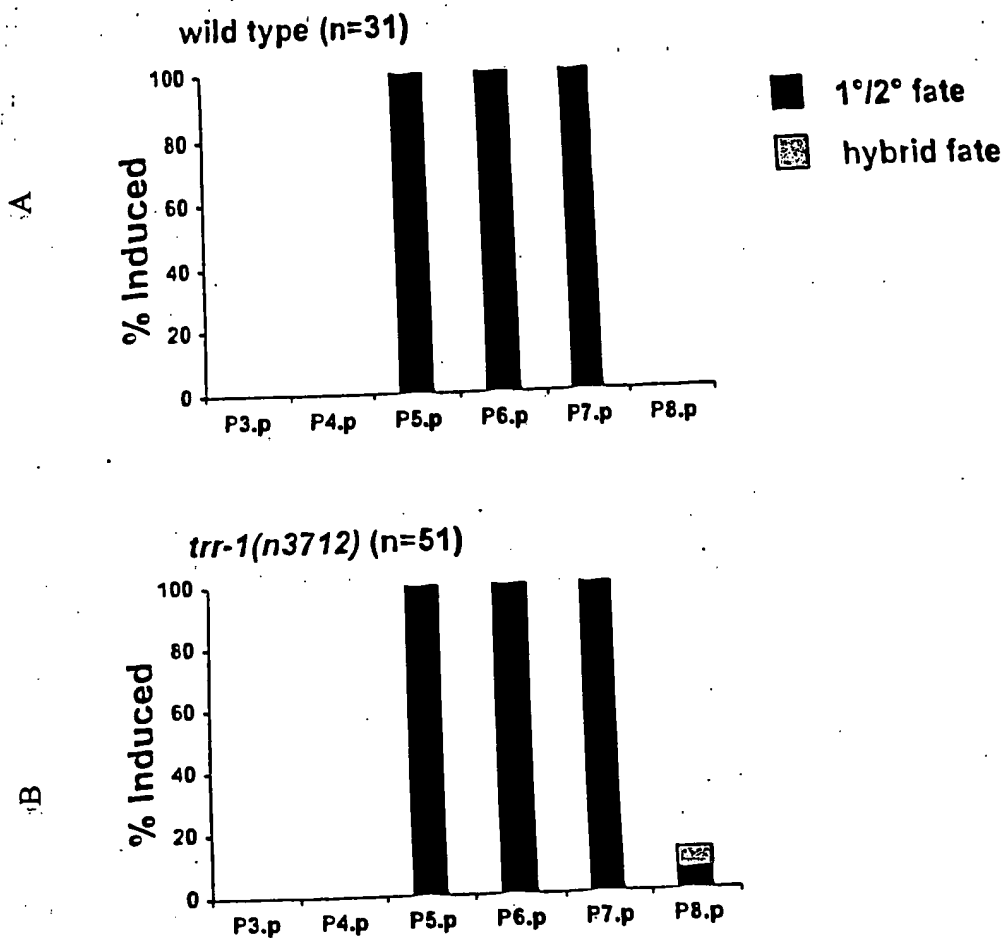
TCCTCAAAGCGCAAAAGAAGGAAGACGGAGGTCGATGCAAGACATGCGGC  
AAGAACTATGCGTTCAACATGCTTCAACACTTGGTAGCTGATCATCAAGTGA  
AGTTGTGCTCGGCTGAAATCATGTACTCGTGCGATGTGTGCGCGTTCAAAT  
GCTCGAGTTATCAGACTCTGGAAGCCCATCTCACTTCAAATCACCCAAAAGG  
AGATAAGAAGACATCAACACCAGCAAAAAAAGATGATTGTATTACTCTGGAT  
GATTAA

FIGURE 4

MEP-1 protein

MVTADETVLATTNTTSMVSVEPTDPRSAGESSSDSEPTDIEQLKAEQREVMAD  
AANGSEVNGNQENGKEEAASADVEVIEIDDTEESTDPSPDGSDENGDAASTSV  
PIEEEARKKDEGASEVTVASSEIEQDDGDVMEITEEPNGKSEDTANGTVTEEV  
LDEEEPEPSVNGTTEIATEKEPEDSSMPVEQNGKGVKRPVECIELDDDDDDDEIQ  
EISTPAPAKKAKIDDVKATSVPEEDNNEQAQKRLLDKLEEVVKEQKDQPSSKSR  
KVLDTLLGAINAQVQKEPLSVRKLILDKVLVLPNTISFPPSQVCDLLIEHDPEMPL  
TKVINRMFGEERPKLSDSEKRERAQLKQHNPPVPMNTKLLVDIGQDLVQEATYC  
DIVHAKNLPEVPKNLETYKQVAAQLKPVWETLKRKNPYKLMHRCDVCGFQT  
ESKLVMSHKNLHFTGSKFQCTMCKETDTSEQRMKDHYFETHLVIKSEEKE  
SKYPCAICEEDFNFKGVREQHYKQCKKDYIRIRNIMMPKQDDHLYINRWLWER  
PQLDPSILOQQQQQAALQQAQKKQQQLLHQQQAAQAAAAAQLLRKQQLQQQ  
QQQQQARLREQQQAAQFRQVAQLLQQQSAQAQRAQQNQGNVNHNTLIAAM  
QASLRRGGQGGNSLAVSOLLQKQMAALKSQQGAQQLQAAVNSMRSONSQKT  
PTHRTPTFVCEICDASVQEKEKYLQHLQTTHKOMVGKVLQDMSQGAPLACSR  
CRDRFWTYEGLERHLVMSHGLVTADLLLKAQKKEDGGRCKTCGKNYAFNMLQ  
HLVADHQVKLCSAEIMYSCDVCAFKCSSYQTLAHLTSNHPKGDKKTSTPAKK  
DDCITLDD

FIGURE 5



Title: RB PATHWAY AND CHROMATIN REMODELING  
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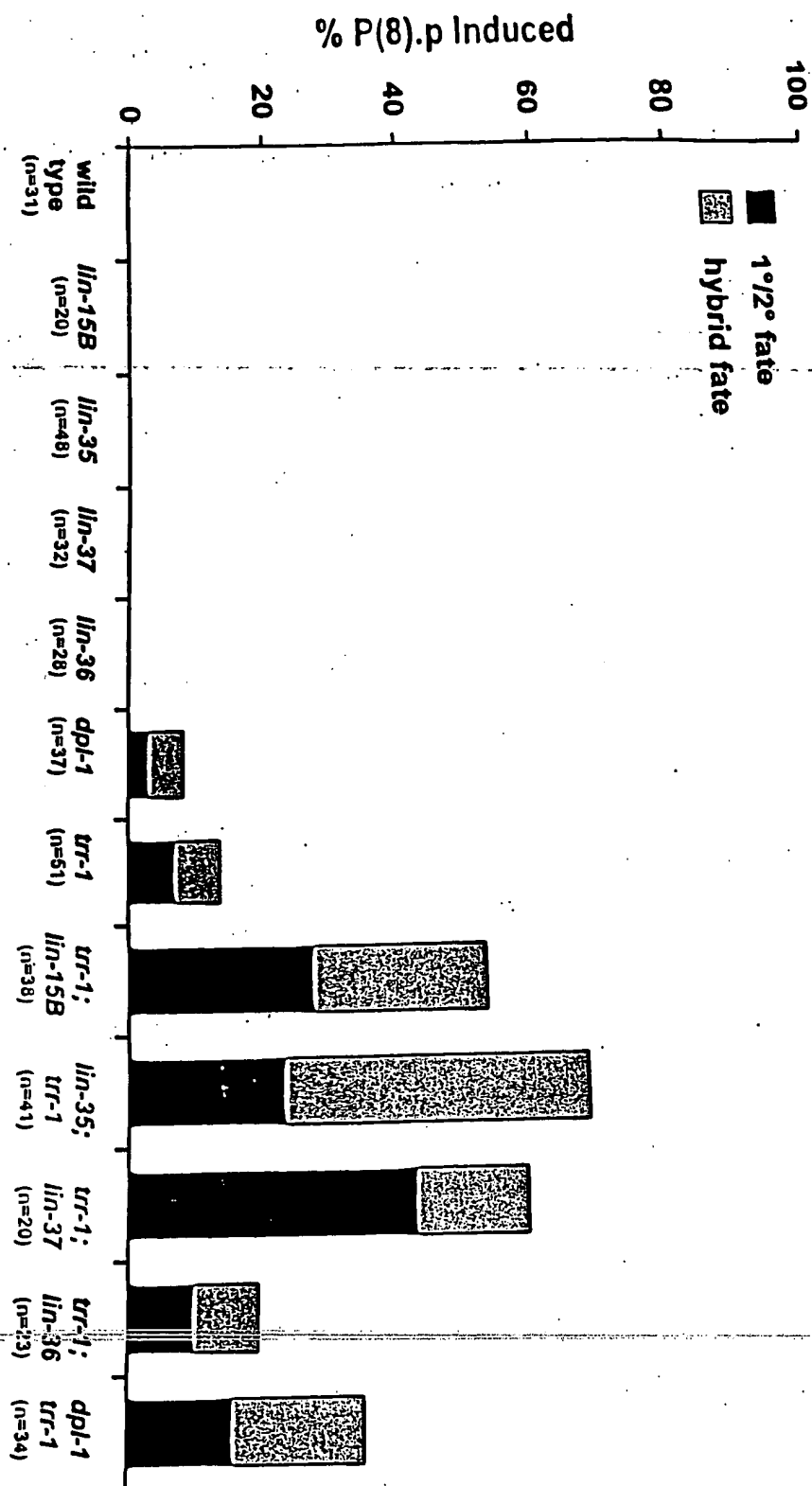
Filing Date: September 12, 2003 Serial No.: N/A

Page 7 of 91

Customer No.: 21559



FIGURE 6



Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE *LET-60* RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 8 of 91

Customer No.: 21559

FIGURE 7

A.



B.

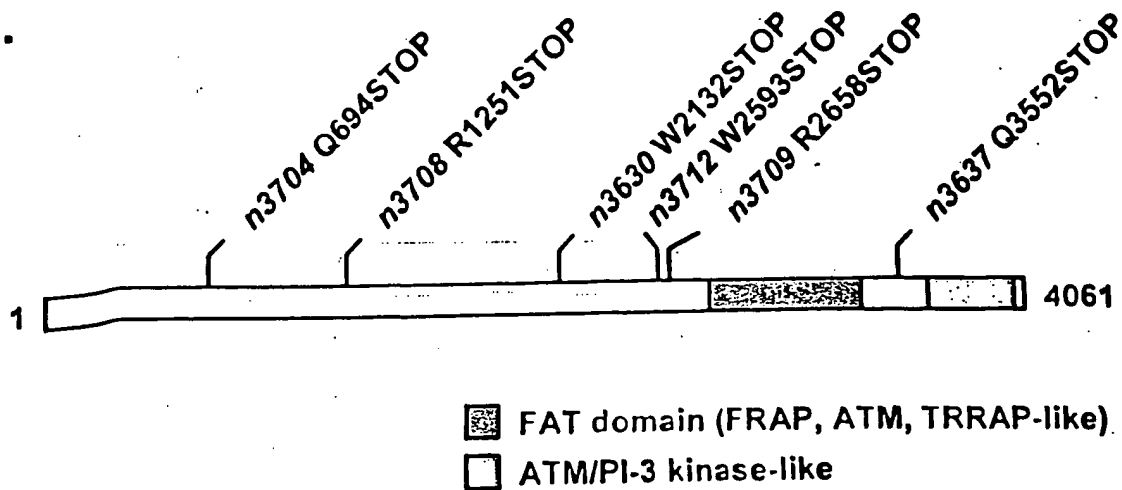


FIGURE 8

*trr-1* genomic sequence:

GAGGAA GATGTAGACGACGATTCCGGTTCCGTA CTCTCATGACTTTTGGCG  
 AAAATCCTCACGAATCTTTTTCCGTCATACGTTGAGTTAAAAATCTGGCGAT  
 GTAACGAAGAATGAGAAGAGCGTTTGATGTTTGCCATAAGTAGATTTTACTG  
 AAATAAGAAAAAGCTTTAATTAAATATAATGATGATTTTTTTTTTCCAACCTCACT  
 TTTGCGATTGTTCTGATGTTTTAGTTCTGTGGCTCTGCGAAGGAAAAGTCG  
 AATAAATGCAGCGAAATTTCTGTTGTTTGTGTATTGTACATTAGACATTGAA  
 GATGATCATCTAAAGCAGATCCAAAGCGATTCCGGTGTCTCTAAACGATTA  
 TAACATTTTTAAAGCTTTTGCCATAATTTAATCCTTACTCGTCGTCATCATCAA  
 ACTTGAGACTGAAAGAGAGAAGTTTGTTCCAAAATGGGTCATAATCGTCGAC  
 AGGTTCCAAACCGCTGAGTTTCTTCAGATAAATATTCTCCTGTAAGACCGTT  
 TCCTTGTTATAACTGATCCCATGTGTCTGAAATTTGTTATTACACTGTTAAT  
 AATCATAAAAATAAAAAGAAAAAGTCAAGAAAGGGTCAAATATTAATCAGGTCA  
 CATCTTTTTTATTCAATAAAATCTCCTCTCTCGTTTCGTGGCAATGCACGTGAA  
 ATGCGCCAACAACCGCGAGTGCGCCAACACACACACATACGCGTCAGCAG  
 ACAATTGCTCTCGTTTGAAATTTAGTTGTTTCTTTGTTTCTGCTGAAATAAT  
 GTCAGTTTTCCGATAATTTAGCGTTTCTGACTGATTTTTCTTGTTGCATTCT  
 ACTTCCTAATAGTTCATTCTACTCCATTCTTCATTTTATAATCTGTTTCCTTCG  
 CAATTTAGTGAATTAACACGTAAATCTTGTTTCAGATAAATTATTCAAATAGT  
 TGCACAAAGCTCAATAGTTTAGAAGTATCTTCAGTGCTGGTCACTAATACAA  
 AATCGATCCGGCTATGGCTTCTCCAGGCTATCGGTCTGTGCAGTCCGATCG  
 GAGTAATCACCTAACAGAGCTGGAAACGAGAATTCAAATCTTGCCGATAAT  
 TCACAAAGAGATGATGTCAAATTGAAAATGTTACAAGTTAGTTTCAATAATTC  
 GTGTTAAGTAATCAATTTGTTGCGTTGCAGGAGATTTGGAGCACAAATCGAAA  
 ATCATTTCACACTAAGTTGCGCAGAGAAAGTCGTGGAGAGGCTCATTCTCTC  
 GTTCTTACAAGTTTTCTGCAACACAAGTCCACAGTTCATTGCTGAAAACAAT  
 ACACAACAGCTTCGAAAGTTAATGCTTGAAATCATTCTTCGACTTTTGAACG  
 TAGAAGCCATGAAACATCATAGCAAAGAAATTATCAAGCAGATGATGAGGCT  
 AATCACCGTGGAAAATGAGGAGAATGCCAATTTGGCTATCAAATTTGTCACC  
 GATCAAGGGAGAAGTACCGGCAAATGCAATATTGCGGAGAGGTTTTCACAG  
 ATAATGGTCTCCTTCAAACAATGGTCATTGATCTGACGGCGAGTGGTCTGA  
 GCTGGTGATATGTTCAACATAAAAGAGCATAAAGCTCCACCGTCAACTAGCT  
 CCGACGAGCAAGTCATCACTGAATATTTGAAGACTTGCTACTATCAACAAAC  
 GGTTCTTCTCAACGGAACGGAAGGAAAACCGCCATTAAAATACAATATGATT  
 CCATCAGCTCATCAGTCAACGAAGGTGCTCCTGGAGGTTCCGTATCTCGTG  
 ATTTTCTTCTATCAACATTTCAAACAGCGATCCAAACCGAAGCGCTTGATT  
 CATGAGGCTTGGTCTTGATTTTCTAAATGTCAGAGTTCCAGACGAGGATAAA  
 CTCAAACAAATCAAATAATAACCGATGATTTTGTGAGTGCACAGTCCCGAT  
 TCCTGTCAATTCGTCAACATTATGGCTAAGATTCCAGCGGTAAGTTTCGTTTTT  
 TCAAGTTTTTTTTCTGTAATCCGATTTTTATTTCAGTTTATGGATCTTATCA  
 TGCAAATGGACCGCTTCTAGTGTCGGGAACAATGCAGATGCTCGAGCGGT  
 GCCCGGCTGATCTGATAAGTGTCGACGAGAAGTTCTGATGGCTTTGAAGT  
 ATTTACATCTGGAGAAATGAAGTCGAAATCTTTCCAATGCTACCTCGACT  
 CATCGCTGAGGAGGTTGTTCTGGGAACAGGATTCACTGCGATTGAGCATTT  
 GCGAGTTTTCATGTATCAAATGCTAGCAGATCTGTTGCATCACATGCGAAAT  
 TCTATAGACTATGAAATGATCACACAGTAAGTTTGAATAAGACTTTCTGATGA

FIGURE 8

AAAATGTTGAAATTTACGCGTGATTTTCGTATTCTGTGCGCACTCTTCACGATC  
 CTAACAACCTCTTCTCAAGTCCAGATTATGTCTGCTCGGCTGCTCAACTCACT  
 GGCCGAATCTCTGTGCAAATGGATTCACATGATACCGTAAGACTTATTCTA  
 TCAATAATCGTATCTCACTTCGAAATAAGTTTCAGACTCGTGATCTGCTCATT  
 GAAATCCTGGAGTCGCACGTGGCCAAGCTCAAACTCTTGCAGTCTATCAC  
 ATGCCTATTCTCTTCCAACAATACGGAACCGAAATAGACTACGAATACAAAA  
 GTTATGAGAGAGACGCCGAGAAACCTGGAATGAATATCCCAAAGGACACTA  
 TACGAGGAGTACCGAAACGAAGAATCCGTGCGGCTCTCCATTGATTCAGTTG  
 AAGAGCTGGAATTCCTGGCATCAGAACCATCCACGTGCGAAGATGCAGATG  
 AGAGTGGTGGAGATCCGAACAAGCTTCTCCGCCAACAAAAGAGGGAAAGA  
 AAACGTCTCCCGAAGCGATTTTAACCGCCATGTCAACGATGACACCTCCTC  
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 TAAATTCTGTGACAGGACAATTGAGAATCGCCCGGCCATCACAGGATATGTAT  
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 TGTGTATGGATGTATTCTGTGCTTCCAACAACCTCGAAATCAACCACAAATGCA  
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 CGTTTTTACAACAATCGACCATGCGATATTCCGGGAAATCTTCTGAAAAGTAT  
 ATGGATTTCTTGATTGAAAGAATTTACAATCGGAACTATCCATTGCAATTGAT  
 GGTGAACACCTTCTTGGTTCGAAATGAAGTGCCATTCTTCTGCATCTACGATG  
 CTTTCAATTCTTGATGTCTCGAATGAAATTGCTGGAAGTTAGCAATGACAAGA  
 CGATGCTATATGTGAAGCTCTTCAAATTATCTTCTCCGCCATCGGAGCCAA  
 TGGCTCTGGGCTTCATGGAGATAAAATGCTCACTTCATACCTCCCAGAGATT  
 CTCAAACAGTCAACTGTCTTGGCATTAAACAGCTCGTGAACCTCTCAACTATT  
 TCCTTTTGCTTCGTGCATTGTTCCGCGAGTATTGGTGGTGGCGCTCAGGATAT  
 TTTGTATGGAAAGTTCCTGCGAGTTACTGCCAAATCTTCTTCAATTCTTGAATA  
 AATTGACGGTGAGTTTCATTTTTTGATATATCGGTAATACACTAAAAATCCAG  
 AATCTTCAGTCATGTCAACATCGGATTCAAATGCGTGAGCTCTTCTGTCGAGT  
 TGTGTTTGACTGTGCCAGTTCGACTCAGTTCCTTCTGCCATACCTACCGCT  
 TCTGATGGATCCACTGGTGTGTGCGATGAATGGGAGTCCGAACATAGTTAC  
 ACAAGGATTGAGAACATTGGAATTATGTGTGGATAACTTGCAACCTGAATAT  
 CTTCTCGAAAATATGCTTCCTGTCCGTGGAGCTTTGATGCAAGGCCTCTGG  
 CGTGTGTATCGAAAGCTCCAGATACATCATCGATGACAGCAGCGTTCAGG  
 ATCCTCGGAAAGTTCGGAGGAGCCAATCGAAAACCTTCTGAATCAACCGCAA  
 ATTCTTCAAGTAGCCACTTTAGGCGACGTAAGTTTATTTAGTTTATTCTCTTC  
 CTCGTTTTAAGTTCTAACATTGATCCTATTAACAGACTGTTGAGTCGTACATC  
 AATATGGAATTCTCGCGGATGGGACTCGATGGCAATCACAGCATTACCTG  
 CCACTGTCCGAGTTGATGAGAGTCGTTGCCGATCAGATGAGATATCCAGCT  
 GATATGATCCTTAATCCAAGTCCTGCAATGATCCCGTCAACTCATATGAAGA  
 AATGGTGTATGGAATTGTGCAAAGCCGTCTTGTTAGCCGGACTTGATCTTC  
 AGGAAGCCCAATTACTCCAAGTGCAAATCTTCCGAAGATTATCAAGAACTT  
 CTTGAAGATTTTGATCCAAACAATCGTACCACTGAAGTATACACATGTCCGA  
 GGGAAAGTGATCGAGAGCTTTTTGTGAATGCACTTCTCGCAATGGCTTGTA  
 GTTCTTAAGTTCTTTTCTCTAATCAGATCTATATTTTAAATTTTTCAGACGG  
 AATATGGAATAAAGACGGTTTCCGGCATGTCTATAGCAAATTCCTTATCAA  
 GTTCTCCGCCAGTTTGC GTTGATTGGAGTACTCGAATACATTGGTGGAAATG  
 GATGGATGCGTCATGCAGAAGAGGAAGGTGTTCTACCATTGTGCCTTGACT

FIGURE 8

Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE LET-60 RAS SIGNALING  
Applicant(s): Horvitz et al.  
Filing Date: September 12, 2003 Serial No.: N/A  
Page 12 of 91 Customer No.: 21559

CGTCTGTTATGGTTGATGCTCTGATTATTTGTCTCTCTGAAACATCGTCAAG  
CTTCATCATTGCTGGTGTCTCTCTCGTCATATCAATGAGACTCTCTCG  
CTTACACTTCCCGATATTGATCAAATGTCGAAAGTTCCAATGTGCAAATAGT  
GATGGAGAAGGTGTTCAAATTGTGTACGGGCCTGCTTGGTATGCAAGATC  
TGGTGGAAATCAATGCAATTGGATACATGATCGAATCGTTTCCACGAAAATTT  
GTTATGGACTTTGTGATAGATGTTGTTGATTGATCATGGAAGTTATTTTGG  
GAACTGTTGAAGAAATATCAAGTGGATCTGCTGATTCTGCATACGATTGTCT  
CAAGAAAATGATGCGAGTCTATTTTATCAAAGAAGAAGGCCAAGAAGAGGA  
GAATCTGACACTCGCGACTATTTTTGTGTCTGCAATCTCTAAGCATTACTTCC  
ACAGTAATGAAAGAGTCAAGAGAATTTGCGATTGGTTTAATGGATCATTGTAT  
GGTTCACTCAAGACTTGCACCATCCCTTGATAAGTTCTACTATCGATTCAAG  
GAGTTCTTTGAGCCAGAATTAATGCGGGTGTCTACAACAGTTCCAACAATGT  
CATTGGCAGACGCAGGAGGAAGTTTGGATGGAGTTCAAACTATATGTTCA  
ACTGTCCGGATGGTTTTGATTTTCAAAAAAGATATGGACATGTACAAGCGATA  
TTTGTACATCTGCTGGATATTGCACAAACCGATACATTTACCTTAAACCAA  
GGAATGCCTTCAAAAAATGCGAGACATGCCCATCGCATTTCCTTCCCTCATT  
CCCAATCACTACACATATTGATTCAATGCGAGCCAGTGCTCTACAGTGTCTT  
GTGATCGCGTATGATCGAATGAAGAAGCAATACATCGACAAGGGAATAGAG  
CTGGGTGATGAGCATAAGATGATAGAGATCCTCGCACTTCGCAGCTCCAAG  
ATCACAGTTGATCAAGTCTACGAGAGCGATGAATCTTGGAGACGATTGATGA  
CAGTTCTATTGAGAGCAGTCACTGACAGAGAACTCCTGAAATTGCGGAGA  
AGCTTCATCCTTCACTTTTGAAGGTCTCACCAATATCCACAATCATCATCGCA  
ACATTTGGTGCTTCTTACATAAGAAATATTAGTGGAGCAGGAGATGACAGTG  
ATTCAGATCGTCATATTTTCTACAACGATATAATGAAGTTCAAGTGTCTCGTG  
GAGCTCAATCCAAAGATTCTGGTCAAAAAATGGCAGTGAATCTCGCAAATC  
AAATGGTTAAATATAAGATGAGTGACAAGATCTCTAGGATTTTGTGAGTTCC  
CAGTAGCTTCACTGAAGAGGAGCTCGATGATTTTCAAGCGGAGAGATGAA  
AGGAATTCGAGAGTTGGATATGATTGGTCATACGGTTAAATGCTTGCTGGA  
TGCCCAAGTGACCACATTACCGGAGCAAATTATTGTGGATATCAGTCGTTTTG  
CTGCTCATTTTGAAGTATGCTTATTCGCAAGATGTACTTGTAATTGGATTGAT  
GATGTCACAGTAATCCTCAACAAAAGTCCCAAGATGTATGGAAGTTCTTCT  
TGTCTCGAGAATCAATTCTAGATCCTGCACGCAGATCCTTTATTGAAGAAT  
CATAGTCTATCAATCAAGTGGTCCACTGCGACAGGAATTCATGGATACTCCG  
GAATATTTTGAAGAACTCATTGATCTTGACGATGAGGAGAATAAGGATGAAG  
ATGAGAGAAAAATCTGGGATCGTGATATGTTTGCATTTTCGATTGTGATCG  
TATCTCGAAGAGCTGCCCTGAGTGGCTTATTTCTCCGAATTCCCAATTCCA  
AGAATTAAGAAGTTGTTCTCCGAAACGGAATTCATGAGCGATATGTGGTTC  
GAGCATTGACTGAGGTGAAGAAATTTCAAGAAGAGATCATAGTGAAACGGA  
TGACAGAGCACAAGTACAAGGTTCCGAAGCTGATTCTGAATACCTTCTGA  
GATATTTGAGGTAATTTCAAGATAGTTTGTAAAAATTAATTACAAAGAAATATA  
CCAAACTGAACCCCAAAAAAATTTTGAATTTTCGGATCAAAAAAATTTAA  
TATTTTCTCGAAAAATCCTTCAAAATACCAAAAAATTCGAATTCTCACTTCTAA  
AATTATTTTGAATTTTAAATAATTTTGAACATTTCTCTATGAAATTCATGTT  
TTGGGCCTATTTCAAGGCTATAAAAAATTTTCTGATTTTAAATAACTTGCAA  
ATTTCAAGGCTCAACATCTATGACTACGATCTATTCATCGTTATCGCCTCGTGT  
TTCAATGGCAATTTCTGTCACCGATCTCTCTTTTCTTCGCGAATATCTTGAAC

FIGURE 8

TGAAGTCATCCCGAAAGTGCCGTTACAATGGCGGAGAGAGCTGTTTCTTCG  
AATTATGCAGAAGTTTGATACGGATCCACAACTGCTGGAACAAGTATGCAG  
CATGTGAAGGCCCTTCAATATTTGGTTATTCCCACGTTGCATTGGGCGTTCG  
AGCGATATGATACGGATGAAATTGTTGGCACCGCACCAATAGATGATTCCG  
ATTCTTCGATGGATGTAGATCCGGCAGGCAGCTCGGATAACCTTGTGGCTC  
GTTTAACATCAGTCATTGATTCTCATCGTAATTATCTGAGCGATGGAATGGT  
CATTGTTTTCTATCAACTTTGCACATTGTTCTACAAAACGCCTCCGAACATA  
TTCACAATAATAACTGCAAGAAACAAGGTGGACGCCTACGGATCCTGATGCT  
CTTCGCCCTGGCCGTGCCTGACCATGTACAATCATCAAGATCCAACAATGCG  
GTACACTGGATTCTTCTTCTTGGCCAATATTATAGAGCGTTTACAATTAATC  
GGAAAATCGTGCTTCAAGTGTTCCATCAACTTATGACTACTTATCAGCAGGA  
CACTAGAGATCAAATCCGGAAAGCCATTGATATATTAAGTCCAGCTTTGAGG  
ACACGAATGGAAGATGGACACTTGCAAATATTGAGTCATGTGAAGAAAATTC  
TTATCGAAGAATGCCATAATTTGCAACATGTTGAGCATGTTTTGTAAGTTTAT  
TATCTAAAATGATTTTTTTTAAATGTTAAAAATTTAATTTTAAAATGCGTTCGTG  
CTCCTTTAATAATTCTGAATTTTCCAGCCAAATGGTGGTTCGCAATTATCGT  
GTCTACTATCATGTTGATTGGAGCTTCTCACGCCTCTTCTGAACGGAGTTC  
AACGAGCACTTGTGATGCCAAATAGTGTTCTGGAAAAGTAAGTTTCCAGCCC  
GTTGTTGTAAGTCACTCCCTTGTAATATTTAGCTGGCAAAGTTCGACGTCA  
TGCGGTGGAGATCTGCGAGATGGTCATCAAGTGGGAATTGTTGAGAAGCT  
GAAAACAGATCATATTATCAGTGACGAAGAAGCTCTCGAAGTTGACAAGCAA  
TTGGATAAGCTGCGAACAGCTTCATCCACAGATCGTTTCGATTTCGAGGAG  
GCTCATAACAAGAGAGACATGCCTGATGCTCAACGCACGATTATCAAAGAG  
CACGCCGATGTGATTGTCAATATGCTTGTCCGATTCTGTATGACGTTCCATC  
AGAATTCGGGTTCTTCGTCCACTTCTCAAAGTGGGAACCATGGTGTGAGTT  
GACCAAAAAATGTGAGCTGCTTCTACGTGCAGCCCTACGACCAAGCATGTG  
GGGAGAATTTGTGAGCTTCCGATTAACAATGATCGAAAAGTTTTTGTCAATT  
CCGAATGATAATGCTCTACGCAATGATATAAGTTCTACGGCCTACGCTAATA  
CTATCCAAAATGCACAACACACTCTGGATATGCTGTGTAATATTATTCCTGTT  
ATGCCAAAAGTACTGATGACTATGATGAGACAAGTCCAACGGCCACTCA  
TACAATGTCTCAATAACGGAGCTCAGGTATGTGAAGAACGATGAATAGGGG  
GTTATAAATCACTAATTTCTCTTAGAACTTTAAGATGACTCGTCTTGTCACTC  
AAATTGTCAGTCGGTTACTCGAAAAGACAAATGTTTCGGTTAACGGGCTTGA  
TGAGCTGGAGCAATTGAATCAATACATTTCCCGATTCTTACATGAACATTTT  
GGATCTCTTTTGAAGTAAGTTTTATTTTTGAATTTCCATCTTTCAACCCTTCGC  
CAGTTGCAGAACTTGAGTGGACCAGTGTTGGGAGTTCTCGGAGCATTTC  
TCTTTTGCGAACAATTTGTGGACACGAGCCAGCATACTTGGATCATTTGATG  
CCTTCATTTGTAAAAGTGATGGAGAGAGCTGCAAAAAGAGCACTTGGCGTAT  
GTTGCCAACTCGCAAGATGGAAATATGGTGAAGAGTAAGTTCTATAAAAAGA  
TTCAGATTTTCTAATCCCCTTAGATTCTTTCCAGATGTTGCTGAATTGTTGT  
GTGCATGCATGGAGCTGGTACGTCCAGAGTCGATCATATCAGTATGGAGA  
TTAAGAGATCAATTGTTGGTGGTATTATCGCGGAGCTGATTATCAAATCGAA  
TCACGATAAGATCATCCAGACGTGAGTGAAGCTTCTCGGAGCAATGATTAG  
CACGCAGGATATGGAATTTACAATTCTCACTGTTCTTCCGCTACTTGTTGCT  
ATCCAATCAATTATTGTGACCAAGTTCAAGAATTGCAAGGATCTGATAGCAG  
ACTATCTGTTGTGGTTATTACCGTTTTTGGAGAACAGCGAATATCGGAAGTC

FIGURE 8

GGAAGCTGGATCTCGTCTCTGGGAAGGATTCTTCTGGGGACTCAAGAGTAG  
CGATCCTCAAACCCGGGAGAAATTCTCGATAGTTTGGGAGAAGACTTGGCC  
ACACATGGCAACAGTAGATATTGCTCATCGAATGAAATATATCATGCAAAAT  
CAAGATTGGTCCAAGTTCAAACACGCGTTTTGGTTGAAATTCGCACTTTGGG  
GAATGCTACGAACGATTGCCAAACGGCCAAGTATCCGAATAATAAGAGAA  
AGAAAGTGATACTGTTGAACTGTGCAACTCCATGGAGAACAATTGAATATGC  
AGCGAAATTGAAGGATCAGCCAATGGAAGTGGAACTGAAATGAAACGAGA  
AGAGCCAGAACCGATGGAAGTTGACGAAAAAGACTCGCAAGATGATTCTAA  
GGATGCCGGGAGAGCCCAAGGAGAAGGAAAAGCTCACATTGGAATTATTGCT  
TGCTGGACAACAAGAACTTTTTGGATGAAGCTTCCAATTATGATTTTGCGGAT  
GCTCTAGATACAGTATCCAGATTACATTTGCACTTAATGGTAAATTGTTCAA  
AGTTTATGAATATTTTTCTTAAAAATCACAATTTTCAGAGAATCAAGTGACAA  
GCAAGATGTGGGTAGTGTTGTTCAAATCATTCTGGAGTTCCTTATCACAATC  
CGAAATCGAAGATTTTACGGCGCTAGTCGTTCCGTTTATGAGCAGTGGAGT  
GCATAATAATTATCAGACGGGTGTACAGGATAGTGTGCTTGCTGTTTGGCTT  
GAAGCTGTTGGTGACGCTGTTTCAATTTGCCGTCCAGATTGATTGAGGTACGTT  
CTGAAAATGAATGCTGGAAAAAATTCGATTTTTCTGTTTAAAAAAAGTTAAAA  
TTTCCGATTTTTTGAATAGCAAAAAAAGAAAAACATTTATTTTGAAAAAAGA  
GTCCTCACCGGAATTTTTTAATAAATAAATTTAAAAAAGAAAAAAACTAAA  
AACTTCAATTTTTGAAAATCAAAAAAATTAACAGAAACAGACGAGGTAAAA  
AATTTTAAAAAAGTTCTGTAAAAAATGGAGAATCACAGTTTTCGTTGTCTT  
TTCTGAAAAAATTTGAAAAATTAATAATTAAACGATTTTTTGGTTTTAATTTA  
AAAAATATACGAAAAAAGACTGAAGAATTTTTTTGTCAAAAAAATTTGATT  
TTGATGAGGGAAAAAGTTCAAAAACTTGGAGAAATCATCGGAAATTTTAGAA  
GATTCATAAAAAATTTCCAAAAAATTAACATTTATGATTTTTGGGTAT  
TTTGAATAATTGAAAAATTACGCTTAATTTTTAGATTAAAAAATCAAAAAA  
ACCAACACTCCTTTTGAACTTGACACTTTTGAAACGTTTTTTTTTTTGAAT  
AATAAATTTCTCATTTTCAATTTATCTCATCAAAACACGAATGCTGGCATACCG  
GAATCAGGCTTCTCGAGAATCATATATGGACAATCCAAAGCAACTCAACAA  
CACGTTACTCCGAGAAATGAAAGTGGCACCAGGTCTCGCTGGAGATATTGA  
GACACTCGAATCTCTTGGAACTCTACAATGAGATATCAGAGTTTGATCAG  
TTGCTGCAATCTGGGAACGCCGTGCTGTATTTCTGATACGATGAGAGCA  
ATGTCAGCTATGCAATTGGGAGATATGGAATTAGCTCAATCTTATCTGGAAA  
AATCAATGAGCAGTACGTATGAACTCTTGCTCCGACAATCAATCGTAAGTT  
TGGATCAATCGGTTGTACTTCTCACACAAAATAGTATTCCTTTGAGCAACAA  
CACTTCAAATTCGGAGAAGCATGTTTCTCCGATTATTGACAAAGAATACGAT  
CATTGGATGGAGATGTACATCACAAATTGCTCGGAGCTTCTTCAGTGGCAAA  
ATGTGGCCGACGTATGCAATGGCAAAGACATGCAACATGTTCTGGCCTGA  
TCAACGCAGCATCTCACATTCGGGACTGGAATGTGGTGGAGAGTGTAATA  
GTCAGATAGCTGGATGTATCCACCAAGTTTCCATTTAGATTACACTCTTTTC  
AATTTGATGAGTACTGTTATGGTTAGTTTAAAGTCAAAAAGTGATATATAATTA  
TTGTTTAAATTTTTCAGCGAATGAATGAAAACCTCAAGCCCGACACATATGAAG  
GAACGATGCAAAATTGCAATTCAAGAGTGCACAGAAGCTCATATTAGTCGTT  
GGAGAGCACTTCCGTCAGTTGTTTCATATGGTCATGTCAAGATTCTTCAGGC  
AATGAACTTGGTTCGAGAAATTGAAGAGTCTACAGATATTGCGATTGCTCTG  
CTCGAGGCCCATCAAACAAAGTGGATCAGGCGTTGATGGGCGATATGAAG

FIGURE 8

TCGTTGATGAAAGTATTCCGAAATAGAACACCAACCACTTCGGATGATATGG  
GATTGTTTTGACTTGGTATGATTGGAGGAATCAGATTCATGGAATGATGCT  
TCAAAGATTCTGAATATTGGGATAAAGTAGGACTCAACGTCGCTGCAACTGGA  
AACCAGTCAATTGTTCCGATTCAATGGCTCAAGCACAGTTGGCCGTAG  
CCAAACATGCCAAGAATCTTGATTCCATAATTTAACGAAAGATCTACTCAA  
CAAATTAGCTGGATTGACAGCCATACCGATGATGGATGCTCAAGATAAAGTT  
TGCACTTACGGCAAGACACTTCGCGATATGGCAAACAGTGCGGCTGACGAA  
AGAGTGAAAAATGAGCTATTGTGTGAAGCGCTTGAAGTTTTGGAAGATGTGC  
GAATTGATGATCTACAGAAGGATCAGGTTGCTGCATTGCTTTATCATCGTGC  
TAATATTCATTCAGTTCTTGATCAGTAAGTTTTCAATGCCGAAAAAAAAATTAA  
AGTTTTACAAAAATAAATTTAGAGCTGAAAATGCTGACTACACCTTCTCCGC  
AGCCTCTCAACTTGTGACTTGCAAATAGTGTGACAACCACTGGAATCAAG  
CTCATGAAAAATTGGGGCCACCATCTTTACAAGAGATTCTTCTCTACGACAG  
TTTGCAAGGAAACCGGAAACAACTTCGGACGGCAGGCTCTCGCTTGTTACT  
TCATTGCGGCTCGTGTGGATAACGATATCAAGGCGAGAAAACCGATTGCCA  
AGATTTTGTGGCTCTCGAAGCACTTGAATGCGTGTGGATCACATGAAGTGAT  
GAATCGGGTTATTAAGAAGCAACTTCATTCACTTAATCTCTTCAATTGGCTTT  
ACTGGCTTCCACAATTGGTTACTGATGTTGATATAAAACCAAATTCGAACCTT  
GTTCTGATTCTCTGCAAGGTAAGTTTTGAAATATTTAAATATTTTCAGAATTTT  
AAATGAAATTCATTTGCAGATGGCTGCTGCTCATCCACTTCAAGTATTTTACC  
ACATTCGGGAGGCAGTTAGCGTTGACGATATTGACTCGGTTCTCGAAGAAG  
ATTACACTGATGAGCAAATGTCGATGGATGTTTCGGATGAGGATTGTTTTGC  
AGACGATCCACCATTTGATAGAATTCTGAAAATATGTCTGAAATATCGTCCAA  
CTGATATTCGAGTCTTCCATCGTGTCTCTCAAAGAACTTGACGAGATGAATGA  
GACATGGGTGAACGTCCTTGCGTCATGCGATCTGCCTCAAGGATCAGAT  
GTTCAAAGATTTCTCGGAACAAATGGACGCGACGTTCAATGAGATGCAATAT  
TCGGAGGATGTGACTATGATGACGTTGAGATGGAGGAAACAGCTGGAAGAA  
GACTTGGTGTATTTCCAACAGAATTATAATCTTGATTTCCTGGAGATTCGTAA  
CAAGCGAAAGATGATCGTGACGAAGGGATGTATGGGAGTCGAGAAAAGTCA  
GATAATGTTGAAAAAGAGCTGAGTCAAGTGTTACAGAGCCGGCCGGCAT  
GCAAGATGAATTTGATTTTGTACAAATATGACTAATATGATGGTCTCACAGT  
TGGATATTCATGCAGTCGATGCTCCACGCCCTCAGGGATATATTGCTATTGT  
TCTCGACTGGATTGAGCGATTTCGTGCTGTTTCGATCGACTTCCACGAAG  
AATCCCTCTGGAATCGTCAAGCCCATATCTCGCCAGATTCAGCCATCGTACA  
GGATGCATCGAAATGCCATACGATTTGCTCAACGTTTTGCGCGCCAAGAAT  
CATACTCTGATGGCTTCCAATCAAACGGGGCAATACATATCCATGCTCTCTC  
GATTTGAGCCAACTTTGAGATTGTGATCAAAGGTGGTCAAGTGATAAGAAA  
GATCTATATTCGAGGACAAACCGGAAAGAGTGCGGCGTTTTATCTGAAGAA  
ATCTGTGCAGGATGAGCCAATAACCGAGTTCCACAAATGTTCAAACATCTT  
GATCACGTTCTACAAACCGATAGAGAGTCGGCGGAGAAGACATCTTCATGCT  
CCAACAGTGCTGCAGATGAGAGTCGGACAGAAGACGACACTCTACGAAGTT  
GCATCCGTTCAACCATATGCAATGCCACCGGATTGTACCAGAACTATCCAG  
CATCACAAATCGACATTGTTTCATCCATATGATGTGCTGACTGCCACTTTCAAT  
GGAAGTTATTATCCGGATGATATGGTATTGCACTTCTTTGAGAGATTGCCCC  
AAAGTTCTTCATCCATCGGACAACCTCTTCCAACCTCCGACGAACCAAGATGG  
AACAGTTGCTCCGCCACGACTAACGGAAGCTCACCACATCAAGAATATTATT



FIGURE 8

TATGAGTACGTTTGAGAAGCTAGTGTCTAAAATAATAATTAATGTAAAAAAT  
 TTTCAGAGACTTTGCCCCGAGATATGATCCCATTCGACTTCTCTACGACTAC  
 CTCACCTGCACGATATCCTGATCCGGTTATGTACTATGCAATGAAGAAGCAAT  
 TGCTGCACAGTCTCGCCGTCTATCCACAATCGAATATCATTGCAATCTGAC  
 ACCAATGGGACCTGATCAAATGATGATGACAATGAATACTGGAGTCCTTAGC  
 AATCCTTCATATAGATTGAAATCCGAGGAGGACGATCACTTCATGATATTC  
 AACACTTTGGACATGAAGTTCATTCCGATTGACTCCAAATCTATCGATTTTG  
 GTTGGTGTTCACAGGATGGTGACTTGTATGGAGTATGGCTGCTGCGTCA  
 AAATGTTTGATGAAGAAGGAACCTGAAGTTATCATGAGACCGTTAGTATGGG  
 ATGAATTCGCCAACAATACAGATTGCGACAAATCGGTAATTTTACTTTAATAT  
 GCTAATAGGGAATTGAACTAATGTTTTCCAAGCGTTTGCAGGTATTCGCGTG  
 TCATGCATCGAATTCTTACATCAATGGTGTGCGGAGCAAGCTTCGAAACACG  
 AATAGCGCCGACGCCAACTCAGAAAGGACGATTGTGTGTGCTGATCAGT  
 CGAGCCAAGGATTCCGATAATCTGGCCCGAATGCCACCCACCTACCACGC  
 GTGGTTCAGATCTCATAATTACCGTTCTCTATTTTGATCCCGCCTCCCACTC  
 TCACAGATCTCTATACATTTGTCAAATGTTTCCAATCTTTTATCTGCCATA  
 CATTTCGTTTTATTGTTTTGTTTCTTTCTTTCTTTATTTCTTTCTAACTTTA  
 AGATTTATGTAAATATTTAACTGCGCTGGTATTTATGAAAAATTCAGATAAAG  
 TTTTCAAGTTTAAAAAATCGAAAATTCGAAGTCGGAAGTTCTCTTACAGGTGT  
 AGTAAGTAGGCACAATGGCAATAGGTACATGGAAGGCTTGCGGAAGGCACA  
 TGGGTAGGCATAAGATCGAAAAATAAGCTGATATATAAATATAGATAGGTAT  
 TGGTTAGGCACAAATTAGGCACGTAGGTGTGAGCTGGCAAATAGGTAGGCA  
 TGACGTTCCGGCAAATCGGCAAATTGCCGATTGGCGAAAATTTTCAAATCCG  
 GCGATTGCGCGGAAATGTTTAGAGAAATTTTTATAAGACAGAAAACTTACA  
 ACTGTGTCTTTTGAATTTCTTCCGGTTTTCTTTATACAGTGCGTGCAACTTC  
 TATAGCGCCCCCCCCCCCCCCCCCCCCCTATTTTTTCGCGTTTCACGCC  
 ATTCTGATTTTTATTTTTCTGATTTTTTTTTTTTTGCACTGAACTTGGCATTGA  
 GGATGCTTGGAGAGAAATATCAGCCAGCAAATAAAGAATCTGGTCAACTCA  
 ATGTCGAATAGATTTTTTGAGGTTATCGTTAAGAAGGGAGGTCCCACGACGT  
 ATTGATCCTTCATCGAGTTAACAAATTATGATGTTTTAATTGATTTCAATCCAC  
 TTCTGGACACAGAAGGACGAATAGTGCAATCTGGTACAAGTTTATCACCACC  
 TACAACTTCGTGATTTGTGGAAAATCTTTCAGACATGTCTCCATGAGTGTC  
 TCAGAACATCTTGGTCAGGTTTGGAGTCGATCCACCGCTGGGAGCCGAGA  
 ATGGGCCTCTAACAC

FIGURE 9

*lrr-1* ORF sequence

ATGGATCCGGCTATGGCTTCTCCAGGCTATCGGTCTGTGCAGTCCGATCGG  
 AGTAATCACCTAACAGAGCTGGAACGAGAATTCAAATCTTGCCGATAATT  
 CACAAAGAGATGATGTCAAATTGAAAATGTTACAAGAGATTTGGAGCACAAT  
 CGAAAATCATTTCACTAAGTTGCGACGAGAAAGTCGTGGAGAGGCTCATT  
 CTCTCGTTCCTACAAGTTTTCTGCAACACAAGTCCACAGTTCATTGCTGAAA  
 ACAATACACAACAGCTTCGAAAGTTAATGCTTGAAATCATTCTTCGACTTTG  
 AACGTAGAAGCCATGAAACATCATAGCAAAGAAATTATCAAGCAGATGATGA  
 GGCTAATCACCGTGGAATGAGGAGAATGCCAATTTGGCTATCAAATTTGT  
 CACCGATCAAGGGAGAAGTACCGGCAAATGCAATATTGCGGAGAGGTTTC  
 ACAGATAATGGTCTCCTTCAAACAATGGTCATTGATCTGACGGCGAGTGGT  
 CGAGCTGGTGATATGTTCAACATAAAAGAGCATAAAGCTCCACCGTCAACTA  
 GCTCCGACGAGCAAGTCATCACTGAATATTTGAAGACTTGCTACTATCAACA  
 AACGGTTCCTTCTCAACGGAACGGAAGGAAAACCGCCATTAATAACAATATG  
 ATTCCATCAGCTCATCAGTCAACGAAGGTGCTCCTGGAGGTTCCGTATCTC  
 GTGATTTTCTTCTATCAACATTTCAAACAGCGATCCAAACCGAAGCGCTTG  
 ATTTGATGAGGCTTGGTCTTGATTTTCTAATGTCAGAGTTCAGACGAGGA  
 TAAACTCAAACAAATCAAATAATAACCGATGATTTTGTGAGTGCACAGTCCC  
 GATTCCTGTCAATCGTCAACATTATGGCTAAGATTCCAGCGTTTATGGATCTT  
 ATCATGCAAATGGACCGCTTCTAGTGTGCGGAACAATGCAGATGCTCGAG  
 CGGTGCCCGGCTGATCTGATAAGTGTCCGACGAGAAGTTCTGATGGCTTTG  
 AAGTATTTACATCTGGAGAAATGAAGTCGAAATCTTTCCAATGCTACCTC  
 GACTCATCGCTGAGGAGGTTGTTCTGGGAACAGGATTCACTGCGATTGAGC  
 ATTTGCGAGTTTTCATGTATCAAATGCTAGCAGATCTGTTGCATCACATGCG  
 AAATTCTATAGACTATGAAATGATCACACACGTGATTTTCTGATTCTGTGCGA  
 CTCTTCACGATCCTAACAACCTCTTCTCAAGTCCAGATTATGTCTGCTCGGCT  
 GCTCAACTCACTGGCCGAATCTCTGTGCAAATGGATTACATGATACCTTT  
 CAGACTCGTGATCTGCTCATTGAAATCCTGGAGTCGCACGTGGCCAAGCTC  
 AAAACTCTTGCACTCTATCACATGCCTATTCTCTTCCAACAATACGGAACCG  
 AAATAGACTACGAATACAAAAGTTATGAGAGAGACGCCGAGAAACCTGGAA  
 TGAATATCCCAAAGGACACTATACGAGGAGTACCGAAACGAAGAATCCGTC  
 GGCTCTCCATTGATTGAGTTGAAGAGCTGGAATTCCTGGCATCAGAACCATC  
 CACGTCGGAAGATGCAGATGAGAGTGGTGGAGATCCGAACAAGCTTCCTCC  
 GCCAACAAAAGAGGGGAAAGAAAACGTCTCCCGAAGCGATTTTAACCGCCAT  
 GTC AACGATGACACCTCCTCCATTGGCAATTGTTGAAGCTCGAAATCTTG  
 AAGTATATAATGCATACGTGTAAATTCGTGACAGGACAATTGAGAATCGCCC  
 GGCCATCACAGGATATGTATCATTGTTGGAAGGAGCGAGATTTATTGGAACG  
 TCTTCTACGATATGGTGTAAATGTGTATGGATGTATTGCTGCTTCCAACAAC  
 CGAAATCAACCACAAATGCATTCTTCAATGCGGACAAAAGATGAGAAAGATG  
 CTCTGGAGTCGTTGGCAAACGTTTTACAACAATCGACCATGCGATATTCCG  
 GGAAATCTTCGAAAAGTATATGGATTTCTTGATTGAAAGAATTTACAATCGGA  
 ACTATCCATTGCAATTGATGGTGAACACCTTCTTGGTTGGAATGAAGTGCC  
 ATTCTTCGCATCTACGATGCTTTTATTCTTGATGTCTCGAATGAAATTGCTGG  
 AAGTTAGCAATGACAAGACGATGCTATATGTGAAGCTCTTCAAATTTATCTTC  
 TCCGCCATCGGAGCCAATGGCTCTGGGCTTCATGGAGATAAAATGCTCACT  
 TCATACCTCCCAGAGATTCTCAAACAGTCAACTGTCTTGGCATTAAACAGCTC

FIGURE 9

GTGAACCTCTCAACTATTTCTTTTGCTTCGTGCATTGTTCCGCAGTATTGGT  
GGTGGCGCTCAGGATAATTTGTATGGAAAGTTCCTGCAGTTACTGCCAAATC  
TTCTTCAATTCTTGAATAAATTGACGAATCTTCAGTCATGTCAACATCGGATT  
CAAAATGCGTGAGCTCTTCGTGAGTTGTGTTTGAAGTGTGCCAGTTGACTCA  
GTTCCCTTCTGCCATACCTACCGCTTCTGATGGATCCACTGGTGTGTGCGAT  
GAATGGGAGTCCGAACATAGTTACACAAGGATTGAGAACATTGGAATTATGT  
GTGGATAACTTGCAACCTGAATATCTTCTCGAAAATATGCTTCCTGTCCGTG  
GAGCTTTGATGCAAGGCCTCTGGCGTGTGTATCGAAAGCTCCAGATACAT  
CATCGATGACAGCAGCGTTGAGGATCCTCGGAAAGTTCGGAGGAGCCAATC  
GAAAACCTTCTGAATCAACCGCAAATTCTTCAAGTAGCCACTTTAGGCGACAC  
TGTTTCAGTCGTACATCAATATGGAATTCTCGCGGATGGGACTCGATGGCAAT  
CACAGCATTACCTGCCACTGTCCGAGTTGATGAGAGTCGTTGCCGATCAG  
ATGAGATATCCAGCTGATATGATCCTTAATCCAAGTCTTGAATGATCCCGT  
CAACTCATATGAAGAAATGGTGTATGGAATTGTGAAAGCCGTCTTGTTAGC  
CGGACTTGGATCTTCAGGAAGCCCAATTACTCCAAGTGCAAATCTCCGAA  
GATTATCAAGAACTTCTTGAAGATTTTGTATCCAAACAATCGTACCACTGAAG  
TATACACATGTCCGAGGGAAAGTGTATCGAGAGCTTTTGTGAATGCACTTCT  
CGCAATGGCTTACGGAATATGGAATAAGACGGTTTCCGGCATGTCTATAG  
CAAATTCTTTATCAAAGTTCTCCGCCAGTTTGCCTTGATTGGAGTACTCGAA  
TACATTGGTGGAAATGGATGGATGCGTCATGCAGAAGAGGAAGGTGTTCTA  
CCATTGTGCCTTGACTCGTCTGTTATGGTTGATGCTCTGATTATTTGTCTCTC  
TGAAACATCGTCAAGCTTCATCATTGCTGGTGTCTCTCTTCTGTCATATC  
AATGAGACTCTCTCGCTTACACTTCCCGATATTGATCAAATGTGAAAGTTC  
CAATGTGCAAATACTTGATGGAGAAGGTGTTCAAATTGTGTACGGGCGCTG  
CTTGGTATGCAAGATCTGGTGGAAATCAATGCAATTGGATACATGATCGAATC  
GTTTCCACGAAAATTTGTTATGGACTTTGTGATAGATGTTGTTGATTGATCA  
TGGAAGTTATTTTGGGAAGTGTGAAAGAAATATCAAGTGGATCTGCTGATTC  
TGCATACGATTGTCTCAAGAAATGATGCGAGTCTATTTTATCAAAGAAGAA  
GGCCAAGAAGAGGAGAATCTGACACTCGCGACTATTTTGTGTCTGCAATCT  
CTAAGCATTACTTCCACAGTAATGAAAGAGTCAGAGAATTTGCGATTGGTTT  
AATGGATCATTGTATGGTTCACTCAAGACTTGCACCATCCCTTGATAAGTTC  
TACTATCGATTCAAGGAGTTCTTTGAGCCAGAATTAATGCGGGTGCTCACAA  
CAGTTCCAACAATGTCATTGGCAGACGCAGGAGGAAGTTTGGATGGAGTTC  
AAAACATATGTTCAACTGTCCGGATGGTTTTGATTTGAAAAAGATATGGA  
CATGTACAAGCGATATTTGTACATCTGCTGGATATTGCACAAACCGATACA  
TTTACCTTAAACCAAAGGAATGCCTTCAAAAAATGCGAGACATGCCCATCGC  
ATTTCTTCTCCTCATTCCCAATCACTACACATATTGATTCAATGCGAGCCAGT  
GCTCTACAGTGTCTTGTGATCGCGTATGATCGAATGAAGAAGCAATACATCG  
ACAAGGGAATAGAGCTGGGTGATGAGCATAAGATGATAGAGATCCTCGCAC  
TTCGCAGCTCCAAGATCACAGTTGATCAAGTCTACGAGAGCGATGAATCTTG  
GAGACGATTGATGACAGTTCTATTGAGAGCAGTCACTGACAGAGAACTCC  
TGAAATTGCGGAGAAGCTTCATCCTTCACTTTTGAAGGTCTCACCAATATCC  
ACAATCATCATCGCAACATTTGGTGCTTCTTACATAAGAAATATTAGTGGAG  
CAGGAGATGACAGTGATTGAGATCGTCATATTTCTGACAAACGATATAATGAA  
GTTCAAGTGTCTCGTGGAGCTCAATCCAAAGATTCTGGTCAAAAAATGGCA  
GTGAATCTCGCAAATCAAATGGTTAAATATAAGATGAGTGACAAGATCTCTA

FIGURE 9

Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE LET-60 RAS SIGNALING  
Applicant(s): Horvitz et al.  
Filing Date: September 12, 2003 Serial No.: N/A  
Page 19 of 91 Customer No.: 21559

GGATTTTGT CAGTTCCCAGTAGCTTCACTGAAGAGGAGCTCGATGATTTCGA  
AGCGGAGAAGATGAAAGGAATTCGAGAGTTGGATATGATTGGTCATACGGT  
TAAAATGCTTGCTGGATGCCAGTGACCACATTCACGGAGCAAATTATTGTG  
GATATCAGTCGTTTTGCTGCTCATTTTGAGTATGCTTATTCGCAAGATGTACT  
TGTA AATTGGATTGATGATGTCACAGTAATCCTCAACAAAAGTCCCAAAGAT  
GTATGGAAGTTCTTCTGTCTCGAGAATCAATTCTAGATCCTGCACGCAGAT  
CCTTTATTCGAAGAATCATAGTCTATCAATCAAGTGGTCCACTGCGACAGGA  
ATTCATGGATACTCCGGAATATTTTGAGAACTCATTGATCTTGACGATGAG  
GAGAATAAGGATGAAGATGAGAGAAAAATCTGGGATCGTGATATGTTTGCAT  
TTTCGATTGTGCGATCGTATCTCGAAGAGCTGCCCTGAGTGGCTTATTTCTCC  
GAATTCCCCAATTCCAAGAATTAAGAAGTTGTTCTCCGAAACGGAATTCAAT  
GAGCGATATGTGGTTCGAGCATTGACTGAGGTGAAGAAATTTCAAGAAGAG  
ATCATAGTGAAACGGATGACAGAGCACAAGTACAAGGTTCCGAAGCTGATT  
CTGAATACCTTCCTGAGATATTTGAGGCTCAACATCTATGACTACGATCTATT  
CATCGTTATCGCCTCGTGTTTCAATGGCAATTTGTCACCGATCTCTCTTTTC  
TTCGCGAATATCTTGAACTGAAGTCATCCCGAAAGTGCCGTTACAATGGCG  
GAGAGAGCTGTTTCTTGAATTATGCAGAAGTTTGATACGGATCCACAACT  
GCTGGAACAAGTATGCAGCATGTGAAGGCCCTTCAATATTTGGTTATTCCCA  
CGTTGCATTGGGCGTTTCGAGCGATATGATACGGATGAAATTGTTGGCACCG  
CACCAATAGATGATTCCGATTCTTCGATGGATGTAGATCCGGCAGGCAGCT  
CGGATAACCTTGTGGCTCGTTTAACATCAGTCATTGATTCTCATCGTAATTAT  
CTGAGCGATGGAATGGTCATTGTTTTCTATCAACTTTGCACATTGTTCTGAC  
AAAACGCCTCCGAACATATTCACAATAATAACTGCAAGAAACAAGGTGGACG  
CCTACGGATCCTGATGCTCTTCGCCTGGCCGTGCCTGACCATGTACAATCA  
TCAAGATCCAACAATGCGGTACACTGGATTCTTCTTCTTGGCCAATATTATA  
GAGCGTTTCACAATTAATCGGAAAATCGTGCTTCAAGTGTTCCATCAACTTA  
TGACTACTTATCAGCAGGACACTAGAGATCAAATCCGGAAAGCCATTGATAT  
ATTA ACTCCAGCTTTGAGGACACGAATGGAAGATGGACACTTGCAAATATTG  
AGTCATGTGAAGAAAATTTCTATCGAAGAATGCCATAATTTGCAACATGTTCA  
GCATGTTTTCCAAATGGTGGTTCGCAATTATCGTGTCTACTATCATGTTGCGAT  
TGGAGCTTCTCACGCCTCTTCTGAACGGAGTTCAACGAGCACTTGTGATGC  
CAAATAGTGTTCTGGAAAATTTAGCTGGCAAACCTCGACGTCATGCGGTGG  
AGATCTGCGAGATGGTCATCAAGTGGGAATTGTTCAGAACGCTGAAAACAG  
ATCATATTATCAGTGACGAAGAAGCTCTCGAAGTTGACAAGCAATTGGATAA  
GCTGCGAACAGCTTCATCCACAGATCGTTTCGATTTCGAGGAGGCTCATAA  
CAAGAGAGACATGCCTGATGCTCAACGCACGATTATCAAAGAGCACGCCGA  
TGTGATTGTCAATATGCTTGTCCGATTCTGTATGACGTTCCATCAGAATTG  
GGTCTTTCGTCCACTTCTCAAAGTGGGAACCATGGTGTGAGTTGACCAA  
AAATGTCAGCTGCTTCTACGTGCAGCCCTACGACCAAGCATGTGGGGAGAA  
TTTGT CAGCTTCCGATTAACAATGATCGAAAAGTTTTTGTCAATTCCGAATGA  
TAATGCTCTACGCAATGATATAAGTTCTACGGCCTACGCTAATACTATCCAA  
AATGCACAACACACTCTGGATATGCTGTGTAATATTATTCCTGTTATGCCAAA  
AACTAGCTTGATGACTATGATGAGACAACCTCAAACGGCCACTCATACAATGT  
CTCAATAACGGAGCTCAGAACTTTAAGATGACTCGTCTTGTCACTCAAATTG  
TCAGTCGGTTACTCGAAAAGACAAATGTTTCGGTTAACGGGCTTGATGAGCT  
GGAGCAATTGAATCAATACATTTCCCGATTCTTACATGAACATTTTGGATCTC

FIGURE 9

TTTTGAATTGCAGAACTTGAGTGGACCAGTGTTGGGAGTTCTCGGAGCATT  
 TTCTCTTTTGCGAACAATTTGTGGACACGAGCCAGCATACTTGGATCATTG  
 ATGCCCTTCATTTGTAAAGTGATGGAGAGAGCTGCAAAAGAGCACTTGGCG  
 TATGTTGCGAACTCGCAAGATGGAAATATGGTGAAGAATTTCTTTCCAGATG  
 TTGCTGAATTGTTGTGTGCATGCATGGAGCTGGTACGTCCCAGAGTCGATC  
 ATATCAGTATGGAGATTAAGAGATCAATTGTTGGTGGTATTATCGCGGAGCT  
 GATTATCAAATCGAATCACGATAAGATCATCCAGACGTCAGTGAAGCTTCTC  
 GGAGCAATGATTAGCACGCAGGATATGGAATTTACAATTCTCACTGTTCTTC  
 CGCTACTTGTTTCGTATCCAATCAATTATTGTGACCAAGTTCAAGAATTGCAA  
 GGATCTGATAGCAGACTATCTTGTTGTGGTTATTACCGTTTTTGAGAACAGC  
 GAATATCGGAACTCGGAAGCTGGATCTCGTCTCTGGGAAGGATTCTTCTGG  
 GGACTCAAGAGTAGCGATCCTCAAACCCGGGAGAAATTCTCGATAGTTTGG  
 GAGAAGACTTGGCCACACATGGCAACAGTAGATATTGCTCATCGAATGAAAT  
 ATATCATGCAAAATCAAGATTGGTCCAAGTTCAAACACGCGTTTTGGTTGAA  
 ATTCGCACTTTGGGGAATGCTACGAACGATTGCCAAACGGCCAACCTGATCC  
 GAATAATAAGAGAAAGAAAGTGATACTGTTGAACTGTGCAACTCCATGGAGA  
 ACAATTGAATATGCAGCGAAATTGAAGGATCAGCCAATGGAAGTGGAACT  
 GAAATGAAACGAGAAGAGCCAGAACCGATGGAAGTTGACGAAAAAGACTCG  
 CAAGATGATTCTAAGGATGCCGGAGAGCCCAAGGAGAAGGAAAAGCTCACA  
 TTGGAATTATTGCTTGCTGGACAACAAGAACTTTTGATGAAGCTTCCAATT  
 ATGATTTTTCGGATGCTCTAGATACAGTATCCCAGATTACATTTGCACTTAAT  
 GAGAATCAAGTGACAAGCAAGATGTGGGTAGTGTTGTTCAAATCATTCTGGA  
 GTTCCTTATCACAAATCCGAAATCGAAGATTTACGGCGCTAGTCGTTCCGTT  
 TATGAGCAGTGGAGTGCATAATAATTATCAGACGGGTGTACAGGATAGTGT  
 GCTTGCTGTTTGGCTTGAAGCTGTTGGTGACGCTGTTCAATTTGCCGTCCAG  
 ATTGATTGAGTTTATCTCATCAAAACACGAATGCTGGCATACCGGAATCAGG  
 CTTCTCGAGAATCATATATGGACAATTCCAAAGCAACTCAACAACACGTTAC  
 TCCGAGAAATGAAAGTGGCACCAGGTCTCGCTGGAGATATTGAGACACTCG  
 AATCTCTTGGAACACTCTACAATGAGATATCAGAGTTTGATCAGTTTCGCTGC  
 AATCTGGGAACGCCGTGCTGTATTTCTGATACGATGAGAGCAATGTCAGC  
 TATGCAATTGGGAGATATGGAATTAGCTCAATCTTATCTGGAAAAATCAATG  
 AGCAGTACGTATGAACTCTTGCTCCGACAATCAATCCAAACAACACTTCAA  
 ATTCGGAGAAGCATGTTTCTCCGATTATTGACAAAGAATACGATCATTGGAT  
 GGAGATGTACATCACAAATTGCTCGGAGCTTCTTCAGTGGCAAAATGTGGC  
 CGACGTATGCAATGGCAAAGACATGCAACATGTTCTGCGCCTGATCAACGC  
 AGCATCTCACATTCCGGACTGGAATGTGGTTCGAGGAGTGTAAGGTCAGAT  
 AGCTGGATGTATTCCACCAAGTTTCCATTTAGATTACACTCTTTTCAATTTGA  
 TGAGTACTGTTATGCGAATGAATGAAAACCTCAAGCCCGACACATATGAAGGA  
 ACGATGCAAAATTGCAATTCAAGAGTGCACAGAAGCTCATATTAGTCGTTGG  
 AGAGCACTTCCGTCAGTTGTTTCATATGGTCATGTCAAGATTCTTCAGGCAA  
 TGAACCTTGGTTCGAGAAATTGAAGAGTCTACAGATATTGCGATTGCTCTGCT  
 CGAGGCCCATCAAACAAAGTGGATCAGGCGTTGATGGGCGATATGAAGTC  
 GTTGATGAAAGTATTCCGAAATAGAACACCAACCACTTCGGATGATATGGGA  
 TTCGTTTCGACTTGGTATGATTGGAGGAATCAGATTCATGGAATGATGCTTC  
 AAAGATTGCAATATTGGGATAAAGTAGGACTCAACGTGCGTGCAACTGGAAA  
 CCAGTCAATTGTTCCGATTCATTCAATGGCTCAAGCACAGTTGGCCGTAGCC

Title: RB PATHWAY AND CHROMATIN REMODELING  
 GENES THAT ANTAGONIZE LET-60 RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 20 of 91

Customer No.: 21559

FIGURE 9

AAACATGCCAAGAATCTTGGATTCCATAATTTAACGAAAGATCTACTCAACAA  
ATTAGCTGGATTGACAGCCATACCGATGATGGATGCTCAAGATAAAGTTTGC  
ACTTACGGCAAGACACTTCGCGATATGGCAAACAGTGCGGCTGACGAAAGA  
GTGAAAAATGAGCTATTGTGTGAAGCGCTTGAAGTTTGGAAAGATGTGCGAA  
TTGATGATCTACAGAAGGATCAGGTTGCTGCATTGCTTTATCATCGTGCTAA  
TATTCATTCACTTCTTGATCAAGCTGAAAATGCTGACTACACCTTCTCCGCA  
GCCTCTCAACTTGTGCACTTGCAAAATAGTGTGACAACCACTGGAATCAAGC  
TCATGAAAAATTGGGGCCACCATCTTTACAAGAGATTCTTCTCTACGACAGT  
TTGCAAGGAAACCGGAAACAACCTTCGGACGGCAGGCTCTCGCTTGTTACTT  
CATTGCGGCTCGTGTGGATAACGATATCAAGGCGAGAAAACCGATTGCCAA  
GATTTTGTGGCTCTCGAAGCACTTGAATGCGTGTGGATCACATGAAGTGAT  
GAATCGGGTTATTAAGAAGCAACTTCATTCACTTAATCTCTTCAATTGGCTTT  
ACTGGCTTCCACAATTGGTTACTGATGTTGATATAAACCACAAATTCGAACCTT  
GTTCTGATTCTCTGCAAGATGGCTGCTGCTCATCCACTTCAAGTATTTTACC  
ACATTCGGGAGGCAGTTAGCGTTGACGATATTGACTCGGTTCTCGAAGAAG  
ATTACACTGATGAGCAAATGTCGATGGATGTTTCGGATGAGGATTGTTTTGC  
AGACGATCCACCATTGATAGAATTCTGAAAATATGTCTGAAATATCGTCCAA  
CTGATATTGAGTCTTCCATCGTGTCTCAAAGAACTTGACGAGATGAATGA  
GACATGGGTTGAACGTCACTTGCCTCATGCGATCTGCCTCAAGGATCAGAT  
GTTCAAAGATTTCTCGGAACAAATGGACGCGACGTTCAATGAGATGCAATAT  
TCGGAGGATGTGACTATGATGACGTTGAGATGGAGGAAACAGCTGGAAGAA  
GACTTGGTGTATTTCCAACAGAATTATAATCTTGATTTCTTGAGATTCTGTAA  
CAAGCGAAAGATGATCGTGACGAAGGGATGTATGGGAGTCGAGAAAAGTCA  
GATAATGTTGAAAAAGAGCTGAGTCAAGTGTTACAGAGCCGGCCGGCAT  
GCAAGATGAATTTGATTTTGTCACAAATATGACTAATATGATGGTCTCACAGT  
TGGATATTGATGAGTCGATGCTCCACGCCCTCAGGGATATATTGATTTGT  
TCTCGACTGGATTGAGCGATTGCTGCTGCTTTCGATCGACTTCCACGAAG  
AATCCCTCTGGAATCGTCAAGCCCATATCTCGCCAGATTGAGCCATCGTACA  
GGATGCATCGAAATGCCATACGATTTGCTCAACGTTTTGCGCGCCAAGAAT  
CATACTCTGATGGCTTCCAATCAAACGGGGCAATACATATCCATGCTCTCTC  
GATTTGAGCCAAACTTTGAGATTGTGATCAAAGGTGGTCAAGTGATAAGAAA  
GATCTATATTGAGGACAAACCGGAAAGAGTGCGGCGTTTTATCTGAAGAA  
ATCTGTGCAGGATGAGCCAACTAACCAGATTCCACAAATGTTCAAACATCTT  
GATCACGTTCTACAAACCGATAGAGAGTCGGCGAGAAGACATCTTCATGCT  
CCAACAGTGCTGCAGATGAGAGTCGGACAGAAGACGACACTCTACGAAGTT  
GCATCCGTTCAACCATATGCAATGCCACCGGATTGTACCAGAACTATCCAG  
CATCACAAATCGACATTGTTTATCCATATGATGTGCTGACTGCCACTTTCAAT  
GGAAGTTATTATCCGGATGATATGGTATTGCACTTCTTTGAGAGATTGCCCC  
AAAGTTCTTCATCCATCGGACAACCTCTTCCAACCTCCGACGAACCAAGATGG  
AAGAGTTGCTCCGCCACGACTAACGGAAGCTCACCACATCAAGAATATTATT  
TATGAAGACTTTGCCCCGAGATATGATCCCATTCGACTTCTCTACGACTACC  
TCACTGCACGATATCCTGATCCGGTTATGTACTATGCAATGAAGAAGCAATT  
GCTGCACAGTCTCGCGCTGCTATCCACAATCGAATATCATTGCAATCTGACA  
CCAATGGGACCTGATCAAATGATGATGACAATGAATACTGGAGTCCTTAGCA  
ATCCTTCATATAGATTGCAAAATCCGAGGAGGACGATCACTTCATGATATTCA  
ACACTTTGGACATGAAGTTCCATTCCGATTGACTCCAAATCTATCGATTTTG

Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE LET-60 RAS SIGNALING  
Applicant(s): Horvitz *et al.*  
Filing Date: September 12, 2003 Serial No.: N/A  
Page 21 of 91 Customer No.: 21559

FIGURE 9

GTTGGTGTTCACAGGATGGTGACTTGTTATGGAGTATGGCTGCTGCGTCA  
AAATGTTTGATGAAGAAGGAACCTGAAGTTATCATGAGACCGTTAGTATGGG  
ATGAATTCGCCAACAATACAGATTGCGACAAATCGCGTTTGCAGGTATTCGC  
GTGTCATGCATCGAATTCTTACATCAATGGTGTGCGGAGCAAGCTTCGAAAC  
ACGAATAGCGCCGACGCCAAACTCAGAAAGGACGATTGTGTGTGCTGATC  
AGTCGAGCCAAGGATTCGGATAATCTGGCCCGAATGCCACCCACCTACCAC  
GCGTGTTCTAG

FIGURE 10

TRR-1 protein sequence

MDPAMASPGYRSVQSDRSNHLTELETRIGNLADNSQRDDVKLKMLQEIWSTIE  
 NHFTLSSHEKVVERLILSFLQVFCNTSPQFIAENNTQQLRKLMLEIILRLSNVEAM  
 KHHSKEIHKQMMRLITVENEENANLAIKIVTDQGRSTGKMQYCGEVSQIMVSFKT  
 MVIDLTASGRAGDMFNIKEHKAPPSTSSDEQVITEYLKTCYYQQTVLLNGTEGK  
 PPLKYNMIPSAHQSTKVLLVPYLVIFFYQHFKTAIQTEALDFMRLGLDFLNVRV  
 PDEDKLKTNQIITDDFVSAQSRFLSFVNIMAKIPAFMDLIMQNGPLLVSQTMQML  
 ERCPADLISVRREVLMAKYFTSGEMKSKFFPMLPRLIAEEVVLGTGFTAIEHLR  
 VFMYQMLADLLHMRNSIDYEMITHVIFVFCRTLHDPNNSQVQIM SARLLNSL  
 AESLCKMDSHDTFQTRDLLIELESHVAKLKTAVYHMPILFQQYGTEIDYEYKSY  
 ERDAEKPGMNIPKDTIRGVPKRRIRRLSIDSVEELEFLASEPSTSEDADESGGDP  
 NKLPPPTKEGKTSPEAILTAMSTMTPPPLAIVEARNLVKYIMHTCKFVTGQLRIA  
 RPSQDMYHCSKERDLFERLLRYGVMCMDFVLPTRNQPMHSSMRTKDEK  
 DAESLANVFTTIDHAIFREIFEKYMDFLIERIYNRNYPLQLMVNTFLVRNEVPFF  
 ASTMLSFLMSRMKLEVSNDKTMLYVKLFKIIFSAIGANGSGLHGDKMLTSYLPE  
 ILKQSTVLALTAREPLNYFLLLRALFRSIGGGAQDILYGKFLQLLPNLLQFLNKL  
 NLOSCQHRQMRELVELCLTVPVRLSSLLPYLPLLMDPLVCAMNGSPNIVTQG  
 LRTLELCVDNLQPEYLLNMLPVRGALMOGLWRVVSAPDTSSMTAAFRILGK  
 FGGANRKL NQPQILQVATLGDTVQSYNMEFSRMGLDGNHSIHLPLSELMRVV  
 ADQMRYPADMILNPSPAMIPSTHMKKWCMELSKAVLLAGLGSSGSPITPSANL  
 PKIIKKLLEDFDPNNRTTEVYTCPRESREL FVNALLAMAYGIWNKDGFRHVYS  
 KFFIKVLRQFALIGVLEYIGGNGWMRHAEEEGVLPLCLDSSVMVDALIICLSETS  
 SSFIIAGVMSLRHINETLSLTLPDIDQMSKVPMCKYLMKVFKLCHGPAWYARS  
 GGINAIGYMIESFPRKFVMD FVIDVDSIMEVILGTVEEISSGSADSAYDCLKKM  
 MRVYFIKEEGQEEENLTATIFVSAISKHYFHSNERVREFAILMDHCMVHSRLA  
 PSLDKFYRFKEFFEPELMRVLTTVPTMSLADAGGSLDGVQNYMFCNCPDGFDF  
 EKDMDMYKRYLSHLLDIAQTDFTLNQRNAFKKCETCPSHFLPPFPITTHIDSMR  
 ASALQCLVIAYDRMKKQYIDKGIELGDEHKMIEILALRSSKITVDQVYESDESWR  
 RLMTVLLRAVTDRETPEIAEKLHPSLLKVSPISTIIATFGASYIRNISGAGDDSDS  
 DRHISYNDIMKFKCLVELNPKILVTKMAVNLANQMVKYKMSDKISRILSVPSSFT  
 EEELDDFEAEKMKGIRELDMIGHTVKMLAGCPVTTFTTEQIIVDISRFAAHFEYAY  
 SQDVLVNWIDDVTILNKSPKDVWKFFLSRESILDPARRSFIRRIIVYQSSGPLRQ  
 EFMDTPEYFEKLIDLDDEENKDEDERKIWD RDMFAFSIVDRISKSCPEWLSPNS  
 PIPRIKKL FSETEFNERYVVRALTEVKKFQEEIIVKRMTEHKYKVPKLILNTFLRYL  
 RLNIYDYDLFIVIASCFNGNFVTDLSFLREYLETEVIPKVPLQWRRELFLRIMQKF  
 DTDPOQTAGTSMQHV KALQYLVIPTLHWA FERYDTDEIVGTAPIDDS DSSMDVDP  
 AGSSDNLVARLTSVIDSHRNYLS DGMVIVFYQLCTLFVQNASEHIHNNNCKKQG  
 GRLRILMLFAWPCLTMYNHODPTMRYTGFFFLANIIERFTINRKIVLQVFHOLMT  
 TYQODTRDQIRKAIDILTPALRTRMEDGHLQILSHVKKILIEECHNLQHVQHV FQ  
 MVVRNYRVYYHVRLLELLTPLLNGVQORALVMPNSVLEKFSWQTRRHAVEICEMV  
 IKWELFRTLKTDHIISDEEALEVDKQLDKLRTASSTDRFD FEEAHNKRDM PDAQ  
 RTIIKEHADVIVNMLVRFCMTFHQNSGSSSTSQSGNHGVELTKKCQQLLRAALR  
 PSMWGEFVSFRLTMIEKFLSIPNDNALRNDISSTAYANTIONAQHTLDMLCNIIPV  
 MPKTS LMTMMRQLQRPLIQCLNNGAQNFKMTRLVTQIVSRILLEKTNVSVNGLD  
 ELEQLNQYISRFLHEHFGSLLNCRNL SGPVLGVLGAFSLLRTICGHEPAYLDHL  
 MPSFVKVMERAAKEHLAYVANSODGNMVKNFFPDVAELL CACMELVRPRVDHI

Title: RB PATHWAY AND CHROMATIN REMODELING  
 GENES THAT ANTAGONIZE LET-60 RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 23 of 91

Customer No.: 21559



FIGURE 10

SMEIKRSIVGGIIAELIISNHDKIIQTSVKLLGAMISTQDMEFTILTVLPLLVRIOISII  
VTKFKNCKDLIADYLVVVITVFENSEYRNSEAGSRLWEGFFWGLKSSDPQTREK  
FSIVWEKTWPHMATVDIAHRMKYIMQNQDWSKFKHAFWLKFALWGMLRTIAKR  
PTDPNNKRKKVILLNCATPWRTIEYAAKLKDQPMEVETEMKREEPEPEVDEK  
DSQDDSKDAGEPKEKEKLTLELLLAGOQELLDEASNYDFADALDTV SQITFALN  
ENQVTSKMWWVLFSFWSSLSQSEIEDFTALVVPFMSSGVHNNYQTGVQDSV  
LAVWLEAVGDAVHLPSRLIEFISSKHECWHTGIRLLENHIWTIPKQLNNTLLREM  
KVAPGLAGDIETLESGLTYNEISEFDQFAAIWERRAVFPDTMRAMSAMQLGD  
MELAQSYLEKSMSSSTYETLAPTINPNNTSNSEKHVSPIIDKEYDHWMEMYITNC  
SELLQWQNVADV CNGKDMQHVRGLINAASHIPDWNVVEECKSQIAGCIPPSFH  
LDYTLFNL MSTVMRMNENSSPT HMKERCKIAIQECTEAHISRWRALPSVVSYG  
HVKILQAMNLVREIEESTDIRIALLEAPSNKVDDQALMGDMKSLMKVFRNRTPTTS  
DDMGFVSTWYDWRNQIHGMMLQRFEYWDKVGLNVAATGNQSIVPIHSMAQA  
QLAVAKHAKNLGFHNLT KDLLNKLGLTAIPMDAQDKVCTY GKT LRDMANSA  
ADERVKNELLCEALEVLEDVRIDDLQKDQVAALLYHRANIHSVLDQAENADYTF  
SAASQLVDLQNSVTTTGIKLMKNWGHLYKRFFSTTVCKETGNNFGRQALACY  
FIAARVDNDIKARKPIAKILWLSKHLNACGSHEVMNRVIKKQLHSLNLFNWLYWL  
PQLVTDVRYKPNSNFVLILCKMAAAHPLOVFYHIREAVSVDDIDSVLEEDYTDEQ  
MSMDVSD EDCFADDPFDRILKICLKYPRTDIRVFHRVLKELDEMNETWVERHL  
RHAICLKDQMFKDFSEQMDATFNEMQYSEDVTMMTLRWRKQLEEDLVYFQQN  
YNLDFLEIRNKRKMIVTKGCMGVEKSQIMFEKELSQVFTEPAGMQDEFDFVTN  
MTNMMVSQLDIHAVDAPRPQGYIRIVLDWIRAIRRRFDRLPRRIPLESSSPYLAR  
FSHRTGCIEMPYDLLNLVRAKNHTLMASNQTGQYISMLSRFEPNFEIVIKGGQVI  
RKIYIRGQTGKSAAFYLKKSVD EPTNRVPOMFKHLDHVLQTDRESARRHLHA  
PTVLQMRVGQKTTLYEVASVQPYAMPDPCTRNYPASQIDIVHPYDVL TATFNG  
SYYPDDMVLHFFERFAQSSSSIGQPLPTPTNQDGT VAPPRLTEAHHIKNIYEDF  
ARDMIPFRLLYDYLTARYPDPMYYAMKKQLLHSLAVLSTIEYHCNLT PMGPDQ  
MMMTMNTGVLSNPSYRFEIRGGRSLHDIQHF GHEVPFRLTPNLSILVGVAQDG  
DLLWSMAAASKCLMKKEPEVIMRPLWDEFANNTDCDKSRLQVFACHASNSYI  
NGVASKLRNTNSADAKLRKDDCVSLISRAKDS DN LARMPPTYHAWF

FIGURE 11

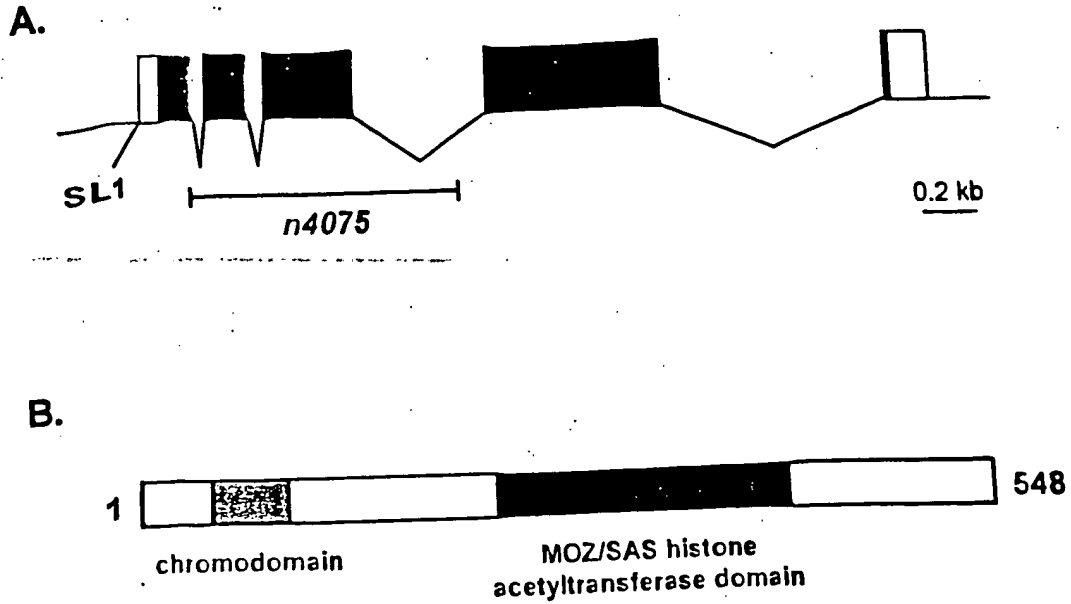


FIGURE 11B

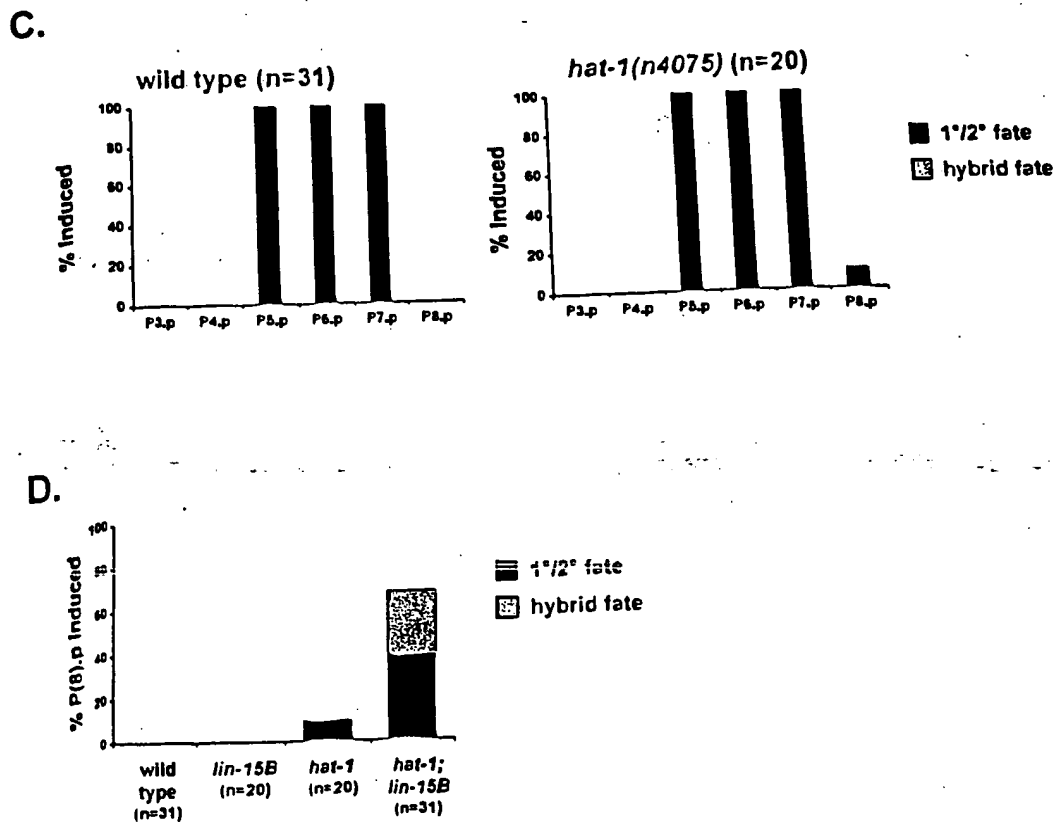


FIGURE 12

*hat-1* genomic sequence

TTGTTTTCGGATTTTTGTGTGCTTCGTAGTTGCTCCGATGATGCCGGATT  
AACATTTGAATGTAACATTTGAATTTTGAATTTGAAGGAATTCATTTGAATCTA  
AAGCTTGCAGGGTCAAGACCGATACATTCTTGCAACACATGACTCGAAAGTA  
TGTAAGGAAAAATTGAAGTTGGAACTTGAATTTGATGAAAAAGTACAGTAA  
TCCATTCTCTCTTATTTTCGCAACTTTCTTCGATTTTTGATTTTTCCTAGATTTT  
TTAAGCTAAAATTTTGTGTTTTATTTTCATTTTTCATGCTTTTCAATTTTCGGTT  
TTCAACAAAATTATGTTTTTCAGAGAAAATCTCGTGAACAATAACTCGGCTAC  
TGTACCATTTAAAGGCGCACACCTTTTCGCGCAGCATTGATTTAAATTTTTT  
GTTCTGGCTCAACAGTGCAATGGACATCTAGATATCTGAAATTTTACCACT  
GAATTCAGTTCAATTTTTAAGCATCTTCAAAAATTTGCGTTTTCTTAATTTCT  
TGTGATCGTTTTTTTTTGAAGTACAATCGTACATTATAAATAACTATTTTCT  
AATTCGAATAATTTAATTCAAGATCATTTTCGCAAAAATAATTGCCTTGAAACGT  
TATGCCGCGGTCAATTTTCAACCACCCTTGTTATTCTTTTTTGAATTGCCGCC  
CTTTTTCCCTGTGGCCGGCGCAGTGCGGCCGAGGTTGGTTTCTAGGCCAG  
CCGGCGCGTTTTATTTTTTTCGAGCATGATTTTCACAATTATTTCTTGCATTTTT  
AAAGTTTTTTATTGATAAAATAGTAAACTAACAACGGATAATATTATTTAAA  
ATTAAAAACTAGTTTGTTCATTTTTGGATCGATTTTATAGATGTTGTTTCATGGA  
TTATGCACGCAAGAAAGTACTATCGTTCACATTTGATTGCTATATTATTGAAT  
ATTGAATTTTTCACACAAAATTGTACTATTTCCAGATATTTATCATGACCGAG  
CCGAAGAAGGAGATTATAGAGGACGAAAATCATGGAATATCCAAGAAAATAC  
CAACAGATCCCAGGCAATACGAGAAAGTTACAGAGGGATGCCGGTTATTGG  
TCATGATGGCTTCAACAAGAAGAAGAAAGTTAGTTTTTACATCTATTTAAACAC  
ATTTTCCAATTATTTTCAGGATGGGCCGAAGTTATTTCAAGATGCCGAGCTG  
CAAATGGTTCAATTAAATTCTATGTCCATTATATCGATTGCAACCGAAGACTT  
GACGAATGGGTTCACTCTGATAGGCTCAATTTAGCGTCTGTGTGAGCTACCA  
AAAAAAGGAGGAAAGAAAGGAGCACACTTGCGGGAAGAAAAGTGAGAAATC  
TATAAACTTTTCAAAAGATTTTAAATAGTTTTATCAATTCATAATTATTTCACTC  
GAGATTCGAATGAAAATGAAGGAAAGAAAAGCGGCCGAAAACGAAAGATTC  
CACTACTTCCGATGGATGATCTCAAGGCGGAATCCGTAGATCCATTACAAG  
CAATTTCAACGATGACCAGCGGATCTACTCCAAGTCTTCGAGGTTCCATGTC  
GATGGTCCGCCATAGTGAAGATGCAATGACAAGGATCCGAAATGTCGAATG  
CATTGAAGTAGGAAGATCACGAATTCAGCCATGGTACTTTGCACCTTATCCA  
CAACAATTGACAAGTTTGGATTGATTTATATTTGCGAATTTTGTCTGAAATA  
TCTAAAGTCGAAAACCTGTCTGAAACGGCACATGGTGAGTGTTTCGAGTTAT  
AGAAAATGACCGAATATAAATAACTGTTTTCAAAATTCAAAATTTTCAATTTT  
CCAAAATGAAAGAATCGGTGAATTCGAAAAAATTCGAGTTCTTGTGTGTTTT  
TGGCTGAATTTTTCGGTTTTTCTTGCTTTTTCCGTTGATATTAGTTTTGAAACA  
TCCAAAATTTGCATTTTTGAAATACTTTTTTGCGAAAACGAAAAAAAATTC  
CAAACGGTGTTTCAAACCAAATTTATCGTAATCAAAAAAGTTTCGCAAATAGG  
CCATTATTCTGCGTGGGAATTCAAATTAATAATCAGCTACTTTTTCTATTTTGC  
AAAATGGAAAAAAACGTAAAAAATAGACAAATTTTAAATTTTTAAACAATTA  
CATTCGGTCCATACTCTTCATTTTCTATCATTTAATTAAATGCCCAATTCTAA  
TTAATTTTATTTCAAGAAAAATGTGCAATGTGTCAACCCACCTGGCAATCAAAT  
CTACAGTCACGATAAACTTTCAATTTTTTGAATCGACGGCCGCAAAAACAAA

Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE *LET-60* RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 26 of 91

Customer No.: 21559

FIGURE 12

AGCTATGCTCAGAATCTATGCCTGCTTGCCAACTTTTTCTGGATCACAGA  
CTCTTTACTATGACACGGATCCATTTTTGTTCTATGTGCTAACCGAAGAAGA  
CGAGAAGGGTCATCATATAGTTGGATACTTTTCAAAAGAAAAGAATCAGCT  
GAAGAATATAATGTTGCGTGTATTCTTGTGTTACCTCCATTTCAAAAGAAAG  
ATACGGAAGTTTGCTCATCGAATTCAGCTATGAACTCTCGAAAATTGAACAG  
AAGACAGGATCACCCGAAAAACCACTATCAGATTGGGACTTCTCTCATATC  
GATCGTACTGGTCAATGGCCATCATGAAAGAGCTTTTCGCATTCAAAAGACG  
ACATCCAGGCGAAGATATCACAGTTCAGGACATTTACAAAGTACATCGATT  
AAACGAGAAGATGTTGTGTCAACGTTACAGCAACTTGATCTATACAAATACT  
ATAAGGGATCATACATAATTGTGATTAGTGATGAAAAGCGTCAAGTTTATGA  
GAAACGGATTGAGGCTGCGAAAAAGAAGACACGAATTAATCCAGCAGCTCT  
GCAATGGCGACCCAAAGAGTACGGAAAAAGAGTGAAGTTTTTTTCAATCA  
AAAATTCGTGTTTACGGCTAAAAACTGAAAATTAATTAATTAATTCGTG  
ATAACATTTTTTTTTCAAAAAACCAAAAAAACAATTCGTTTTTGGCAGAAC  
CAAAAAAAAATTTAAAAAAAACGGTTTACGCCCTATTTATACAAACAACA  
GAAATTGCACTTTTTTGAGCAAATTTGACCCTACAATTTTTTCCAGTTTTTG  
CTCTTTTTCAAAAAAACAACCTAAACACTGGAAATACTAAATACTAAGGAAA  
AAAATGGAAATACTGTTTACAGTGTCAAAAAATTGAAATTTCTAATAAAAT  
CATTTTTCTTTTTACTAAATTTATCAAAAATTTATACTCAAATCTTTCAGTTTT  
TGCGAATTTTTTTTCGAAAAACGAAAAAAATAAACCTAATTTTAACCAAATT  
GTAATTTTGAAAAATCTGGAACGTCCGGAAAACTGAAAAATTAAAAAAAAC  
TTTTCAGAAATTTATTTTTAAAAAACCGTTTTTTTAAATCAAATTTGTATATGT  
TGATGAGAAAAAAAATAGAAATCAATGTTTTTAAGTTTTAAAAGAAAAATTTA  
TTTTAATTATTTTAGTTTTAATAAGGTATTTAAACAGTAACAAGGATGTCCGTT  
TTTCGATTTTCCGAAAAACTAAAAAATTGTCTTTTCGATTTTTTAATCGAAAA  
AAAATAGAAATATTTTACAAAACATACTATTCTTCTAAAAAAAAGAATAGTG  
GGAGATTTTAAATAATTTTTGAACTCTCGCAATTTTTTTCGAAATATCGAAAA  
TCGAAAAACCGGCACAAAAAGCAAAAAGTCTCCGGGAATATATCTTTAAATTA  
TTTTATGAACTTTTTTTTTCAGGCGCAGATCATGTTCTAGCAACAACGACATGT  
GTTCTCGCCACGACGATCTCAACCTGTACATTAATAATAACACTCCGTTTTA  
TCTCGCATCTACACACCGAAAAAGCTTACGCTATCCCTTTATCATTCCCACAC  
CGCTCAGAGAGCGTACGCCTCATTTTATTGTTCTGTGTAATAATTG  
ACTTATTAGTCACTTATTTTTTTAATGAAATTATTCTTGAATTTATAATCTTCT  
TGTTGCAGTTCAAATAATTAATAATTATCATATAGACAAGTAAGTTTATAACT  
GCAAAAGTGAAGTTTTCTAATCATTAAAGCGTTCTGAAGATATTCGGCAACCG  
CCTGAGCGATCAGATCACGGCGGGAACGAGTTGAGGCGTAGACATGCTTG  
CAGCCAGTGACAACCTGAAAGATATTCAAAAAATTAATTTCAGGACTCGAAT  
TTTTAACAATCTGAATAAAAAAATCCAAAATTGTATATTATAGAGTTTTTTGAA  
ATCTAAGCGAAAGCGCGCTCCAATGTAAAACGAAAAGTGCTCCGCCCTAA  
ACGTTGGGTCCCGTTAGGAATTTGTTATTTTTTCGGTTATTTCTGACTATATT  
ATAATTTGAAACGACAAGTATTTTAAACATCATTTTCGACATAAAAAATATGT  
AAAACAACAAAAACAATCGAAAAAATAGTGAAAAAGTTTGAATTTACAGTCT  
CGCCGCCTCCTACCGAGACCTAACGTTAGGAGGGCGGAGCGTTTTCTTTGG  
CATTGAAGCGCGCTTGCTGCGGCCCATTAATAACTTACAGCCTTTGCA  
AAGTCCTTCTTCTGTTTCATCCTCAATCTCGTCAATGTATTGATTGGACAACCT  
CTCAATCTCGGACTGTTCCGCATTTTCATCCTTCAATTTTTGTATTGAGCCT

FIGURE 12

TGAATTGAGCCACCTTCTCCTCTCCGAAAGCCTTAACCGAATACTCCTTACA  
AGCTTCTTTCAACTTGCCCTCGGCCTTCTCCTTGGCATCTC

FIGURE 13

*hat-1* ORF

ATGACCGAGCCGAAGAAGGAGATTATAGAGGACGAAAATCATGGAATATCC  
AAGAAAATACCAACAGATCCCAGGCAATACGAGAAAGTTACAGAGGGATGC  
CGGTTATTGGTCATGATGGCTTCACAAGAAGAAGATGGGCCGAAGTT  
ATTTCAAGATGCCGAGCTGCAAATGGTTCAATTAATTCTATGTCCATTATAT  
CGATTGCAACCGAAGACTTGACGAATGGGTCAGTCTGATAGGCTCAATTTA  
GCGTCGTGTGAGCTACCAAAAAAGGAGGAAAGAAAGGAGCACACTTGCG  
GGAAGAAAATCGAGATTGCAATGAAAATGAAGGAAAGAAAAGCGGCCGAAA  
ACGAAAGATTCCACTACTTCCGATGGATGATCTCAAGGCGGAATCCGTAGA  
TCCATTACAAGCAATTTCAACGATGACCAGCGGATCTACTCCAAGTCTTCGA  
GGTTCATGTGCGATGGTCGGCCATAGTGAAGATGCAATGACAAGGATCCGA  
AATGTCGAATGCATTGAACTAGGAAGATCACGAATTCAGCCATGGTACTTTG  
CACCTTATCCACAACAATTGACAAGTTTGGATTGTATTTATATTTGCGAATTT  
TGTCTGAAATATCTAAAGTCGAAAACCTTGTCTGAAACGGCACATGGAAAAAT  
GTGCAATGTGTCACCCACCTGGCAATCAAATCTACAGTCACGATAAACTTTC  
ATTTTTTGAAATCGACGGCCGCAAAAACAAAAGCTATGCTCAGAATCTATGC  
CTGCTTGCCAAACTTTTTCTGGATCACAAGACTCTTACTATGACACGGATC  
CATTTTTGTTCTATGTGCTAACCGAAGAAGACGAGAAGGGTCATCATATAGT  
TGGATACTTTTCAAAGAAAAAGAAATCAGCTGAAGAATATAATGTTGCGTGT  
ATTCTTGTTACCTCCATTTCAAAGAAAGGATACGGAAGTTTGCTCATCG  
AATTCAGCTATGAACTCTCGAAAATTGAACAGAAGACAGGATCACCCGAAAA  
ACCACTATCAGATTTGGGACTTCTCTCATATCGATCGTACTGGTCAATGGCC  
ATCATGAAAGAGCTTTTCGCATTCAAAGACGACATCCAGGCGAAGATATCA  
CAGTTCAGGACATTTCAAAAGTACATCGATTAAACGAGAAGATGTTGTGTC  
AACGTTACAGCAACTTGATCTATACAAATACTATAAGGGATCATAcataATTG  
TGATTAGTGATGAAAAGCGTCAAGTTTATGAGAAACGGATTGAGGCTGCCA  
AAAAGAAGACACGAATTAATCCAGCAGCTCTGCAATGGCGACCCAAAGAGT  
ACGGAAAGAAAAGAGCGCAGATCATGTTCTAG

FIGURE 14

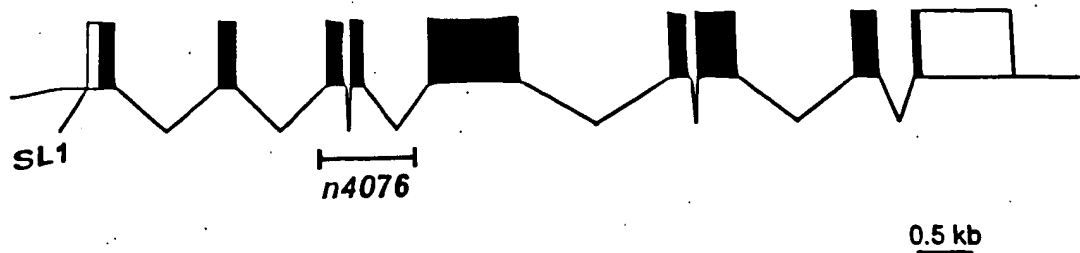
HAT-1 protein

MTEPKKEIIEDENHGISKKIPTDPRQYEKVTEGCRLLVMMASQEEERWAEVISR  
CRAANGSIKFYVHYIDCNRRLEWVQSDRLNLASCELPKKGGKKGAHLREENR  
DSNENEGKKSGRKRKIPLPMDDLKAESVDPLQAISTMTSGSTPSLRGSMSMV  
GHSE DAMTRIRNVECIELGRSRIQPWYFAPYPQQLTSLDCIYICEFCLKYLKSKT  
CLKRHMEKCAMCHPPGNQIYSHDKLSFFEIDGRKNKSYAQNLCLLAKLFLDHKT  
LYYDTPFLFYVLTEEDEKGGHIVGYFSKEKESAAEYNVACILVLPFFQKKGYGS  
LLIEFSYELSKIEQKTGSPEKPLSDLGLLSYRSYWMAIMKELFAFKRRHPGEDI  
TVQDISQSTSİKREDVSTLQQLDLYKYYKGSYIIVISDEKRQVYEKRIEAAKKKT  
RINPAALQWRPKEYGKKRAQIMF

FIGURE 15

A.

*epc-1*



B.

*ssl-1*

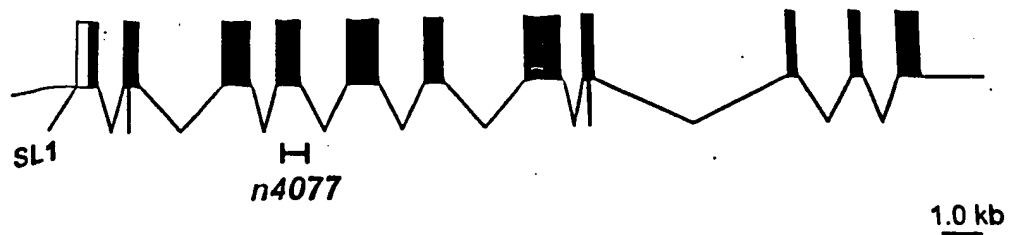




FIGURE 16

*epc-1* genomic sequence

TTTCAAAAAAAAAAATTACCTCGTCAATTTCACTCTCCTCGATGCGATGATT  
ATCCTCGTCCATTTTACCTGAAAAGTGTGATTTTTTACGAATAAAATTATTTT  
CAGATACTTCTAGAAAAAACTGAACGGAATGTTACGAAATTAATTTTCA  
AAGTTGCGAACTGAATTTTCGACAAAAAGTTTCACTGATATTCATTTCAAGC  
ATATTGCAACGTTTTTAAATTAATTTCTAAGAGAAAAAACTGCAAAACAATTC  
GAAAATAATTTTTACAAGTTACTTTTCGAAAAAGTAACAAAAATCCACTAATG  
AACAAAGAAATTTTTGAACAAAAAGAGCTTCTCAGGCTATTTTTGGACGAATAT  
TTTAAATAAACTTTAAAAAATCAACGAAAATCCCCTAAAAATCGCTGAAAAT  
TCCAAAAATTAAAGTTCATTCTCGACCACACCTCTCGTAAATCAGCACGAGA  
CTCACGCAACGCGACCGCGCCGCACTCAACGGCATTGAGTAATGCGGAGC  
GGCAGCGTCGCGTCGTCTATTTGTGTGTGTGTGCGATTGTGTGTGGTGCGA  
CGTGGCCGCTCTGTGTGCCTCTCTAGTGAGTGTTTTCCGACGAGAGACAAC  
ACATTTTCGAGAGACGAAGAGAGTGGCGACGAGGAAGATAGTGTGGTAAGA  
GGAGAGTGTGCGCGAGGGAAAGAGAGCAAAGTGTGAGTGTCTGTGAGAAG  
AGAAGGAGACCCCCCCCCCGCGCTCAACCAGTCGATAGTTGGCCTGA  
GTGTAGGGCCTTCTGTTGTATTCCACTGCTAACCCCCCCAAACACACAAAA  
AGACTCAAAAAGTACTGCTTAAACACAGTGCTCAGCTCATTTTCATTTTGAT  
TTTTATGCTCGCCGTCATCGGCGGATGAATTCATCGCAAAGTCCGTGGCGA  
TTCAACACGTGCGGCGTCTCGCCGCTCTTCTTAACCGTAGTTACAACGTG  
GGAGTACAGAAAGATGGCCACTACTTCGAAGGCGTTTCGAGCCCCGGGCGC  
TCGACTCGAACCGGTCTATGACTGTATACTGGGGCCACGAACCTCCGGACC  
TATCAGAATGCAGTGTTGGAAACCGGGCGGTGACACAAATGCCGTCTGGCA  
TGGAAAAAGAAGAAGAACAGGTTGGTTTTTGGTGGATTATGGATTACTGCTC  
CATTTTGAAATTTTTCGAGTTTTAATGTCTTTTTTCGAATTCCTGGTGCTTTTT  
TCTATCCGAATCATGTTTTAATTCGGTTTTCCGACTACTTTGAAGAATTTTCA  
AATTTTTGATCCCTGATGACGTCACTATTTTTGTCTTTGCCTTTCTGGATCGC  
TTTTATAGTTATTTTCATTTTTTATTTCTTTTTTACACTTTTAACTTAACAATTC  
TCTTAATTCATCCTATTCTATTTAATTTAAGTTTTGATTTTTGATTTTTGATTT  
TTCTCTTTTCTTTTTAGCCGCCGGTGGGCCTTTATTACAACTCTTAAATCAT  
AAAAAAATCAGTTTAAGCAGTTATACATAACTCTTATTATGAAAAAATCGTTA  
TTTTTCGACGGAACTTCATACTTTGAATTTATTTCCAATTTAGATTTTTATTTT  
CTCAAAGTCAGCTCAATTAACCTAACTTAAAATGTTTTGTCCTACCCGCAAAAT  
GTTTTTTTTTAATATTTTAATTTCTATTTTAATTTTTGGCTTTAAAAAATCATTTT  
GCTAAGCCTGAGATGAAGGCGAAATCTCGAGAAAAAGCATTAAAAAGTAAT  
AAATTCGGTTAAAAACGACTTTTTCTATCACAGAAAGTGTCTCTGAGTGCTA  
ACAACCTTCTTCTGTCCAAATTTTGAACAAATTTCCCAATTATGCCGACTTAT  
TACACCTTTTTCCGTCAATCTTCTAGTTTTTCCCACCCTCTTGACCCCTGGTG  
ACGTCATTTGTTTGTTCTTCTTCCAAGACATGCCCTGTGGGGTATTTTTTCTC  
AAAATTTTTGCAAATTTATTGGATTCTAAATAAAATCCAGGAGTCTAGCACC  
AGGAATAATAATGCAAATTTGAAAAAAAATTAACAGAAATAATGATTTTAA  
ATGATTATTTAAATTTTAAATTTTAAATTTCCAGGAAAAACACCTGCAAGAAG  
CGATTGGTGGCGAGCAAGCGAGTAGATCGGGTATTCAGCTGAACCATGTCA  
TTCCAACCTCAAAAAGTCGACCGAGTCAAGATCAACGCTATCACTCCACTTA  
TCACAACAAGAATAAAATGCACCGTTCAAAGTATATCAAAGTTCATGGTGAG  
TTTTTTAACCAAAATTTCCGGCGAAAATAATTTAATTTCCGGTTTTTTGAAATT

FIGURE 16

AATTTCCGCTTGGGTTTTCTTGATTTATTATTTTTGAAATTCCTCTCTGAAT  
 TCGAAAGAAAATAACTTGATTTTTAGACTTCTGGCTAAAACCTTCAAAAAT  
 GTTTGTTGATTGGTTCCAAATTTTCGCCTGATTCCGAATTTGATGTGACAAA  
 TTCAAAAAAAATTCCTGATTTTATATTCAAGCTTTGTGTTTGTGTGTTCTTT  
 TTGGAGCGCGCTTGCATCGTTTGATTTTCTTCGTCTTTTTTAAAATTTATTTTC  
 GCTTGTTTCATTCATTTTGTGCGAGTTTTTTCTGCCAAAATGAATGAAACTG  
 GTTTAAAAAATTGAATTCGGCGAAAATAAATTTTAAAAACGAAACAAATCAA  
 ACGATGCAAGCGCGCTCCAATGCGATTTTTTTGGGCGCGGAAATTCGTGAT  
 TTCAAGCTTAAATATAAAATCAGGTATATTTTTTCGACTTTTTTACGTTGAAA  
 TTCGGAATCAGAGGAAAATTTGAGTCAATCAAAAATATTTCCAGATTTTCG  
 GTATCTTTAATGCATCAAAAATGAATTTTCACCCCATACTCCAGAAAAATA  
 AGAAAACAAATTGCGAAATATTGTTCCCTGATCAAATTTTTCTTTTTTAACT  
 ACACTTCTCTGTTTTGAAGTGAGAAAGTACATTTTTCTGCGTTTCTTATCAGT  
 TATCATTGAAAAGGATCAGAATTTGATGACGATATATTTGTTTAGTTACCTC  
 CCTTTTTCTGAACAGTTTTTGGGAAAAAGGAGAAAAACCGGAATTTTCTAT  
 GAAAATGTGATTTATTTTCAGCCTGGCAAGCACTCGAACGAGACGAACCCG  
 AGTATGACTACGACACAGAAGATGAAGCATGGCTATCAGATCACACTCACAT  
 TGACCCGCGCGTTTTGAAAAGATATTGACACAGTGGAGAGCCATTATC  
 GGAGACACAGATCGCGAGCGAAGATTGGTGATTAATTTGCATAAATGTAA  
 GTTGACGAAATTTCCATTGAAACCCCCCCCCCAAAAATATCGTTTAATTG  
 CAGCACTGGACTCATCAATCGTGTACGAAATATACGAATATTGGCTGTGAA  
 CGCAACATCGGCTGCGACGACGTCTGGTTGTGTTGGAGTCGGTGGATTAAT  
 TCCGAGAGTCAGGACAGAATGTCGGAAGGTAAGAATTTGACTATTTTGAAC  
 GAATTTCTGTGATGAACTTCTCTAAACTTTTTAAAGTTTTTATGGCGGTTCA  
 AAATTTTCGGAATTTTACACTGATTTTAGCTAAAAACTTGAATTTTGGTCATTT  
 GTCCGTGTACATCTGTCCGAAATCGACTTTTTTTGGAATTATCATCCTTTAT  
 TGCACATTTGGCTAGTTTATCTCATTAAATTCGTTGATTACTAAGGTACATTT  
 AAAGCCAATAGGTAACCAACCAAAAATATCATAATTTTTCTACACTTTTTAA  
 TTTCCGACACTACTTGAATAACCCCATAGTGACCAATTTTGATAGTTTTTG  
 GCTGGTTACCGGCTTTAAATGTACCTTATTAATCAACAAAATTAATGAGATA  
 AACTAGCCAAATGTGCAATAAAGGATGATAATTCATAAAAAAGTCGATTTTG  
 GACAGATGTGACACGGGCAATGACCAAAATTCAAGTTTTTAGCTAAAATCA  
 GTGTATTTGTTTCGAAGTTTTGAACCGCTATAAAAAAATTTTTGGAATGCTTT  
 TGGCAAGTTTCATTACGAAATTCATCTTTCTATACGCAAAAATTAGAATT  
 TTCAATTAATAAATTCATTTTACAGGATGGACAAGGTGTTATCAATCCGTACGT  
 TGCATTCGGTCGACGTGCCGAGAAAATGCAGACTCGAAAGAATCGGAAAAA  
 CGATGAAGATTCGTATGAGAAGATTCTCAAGTTGGTACATGACATGTCGAAA  
 GCTCAACAGCTCTTCGATATGACTGCCCGACGAGAAAAGCAGAAGCTCGCG  
 TTGATTGATATGGAATCGGAGATTTTAGCGAAACGAATGGAGATGTCAGATT  
 TTGGTGGTTCTCCGAGTTCGTTCAATGAGATCACCGAAAAGATTGAGCAG  
 CAGCAACGTTGGAAGTCGTGAAACCACCACTGGCAGAAATCAACGGATCAG  
 ATGAAGTGAAGAAGAGGAAGAAGCCGAGACGAAAGATTGCTGATAAGGATT  
 TAATATCGAAAGCCTGGCTTAAAAAGAATGCAGAAAGTTGGAATCGGCCGC  
 CGTCGCTCTTTGGACAACACAGTGGAAATGTTCCGACGGTTACAACGAAGC  
 CAGTTCGAGAGTCGTTGGCGAATGGGCGATTTGCGTTCAAGCGGAGGAGA  
 GGATGTGTTTATCGCGCGGCTCTCACCGTTTACAATGTGCCTACAGCGCCT

FIGURE 16

GCTACAGTACCTCCAGTACAGACTCAAGCAGCAGTGGCTTCATCATCATCG  
TCAAAATCAACGGATATGGTGCCGTGCAACATGAAGTTCTTTGAAACTTTTG  
TTCGGGATTACAGGATTCAGTTTCTCGATCTCTTGGCTTTGTACGCCGACG  
AATGGGACGAGGTGGGCGAGTTGTATTCGATCGGATGCCTCGCAATCGAG  
ACGACAACGACGAACGCACTTCGACAGATCCATGGGCCGAGTATTGTGTGCG  
CGGATAGTTCAAGGTGAGATTTTGAATAAGAATCTTAATTTACGAGATTTT  
GGTTTTTTTCGCTGCTTTTTCTGTAATTTTGTGGTATTTTTCTCGTATTTTCA  
ATTA AAAAACGGGTTTTAAATAATTTTAACCTGAAATTTGCTAAAAACCAAG  
AAATTTTATTAAAAATGCAACAAAAAAGACTGGAGGCACCACCGAATG  
GAGAACAGGAGAACCCAAAACACGCCCATTTTTCCGTGCCGGGGCGGCGA  
AAATTTTGCAGAATTTGCTGCAATTTTCGTTTTACAAACGAAACAACGAAG  
CTCTGAATGTGTTATTTCCGAGCTTCGTTGTTTCGTTTGTAAAACGAAAAATT  
GCAGCAATTTCTGCAAAAATTTGCGCGCGGCACGGAAAAATGGGCGTAGTT  
TTAGTTTCTCCTGTTCTCCTTTCCGTGGTGCCTCCAGTCTTTTTCGCATTCTT  
AATGAAATTTCTTTGTTTTTACGGAATTTAGGTTAAAATTATTTAAACCC  
GTTTTTTTTCAATTGGAAATGCGAGGAAAAACCACAAAATCACAGAGAAAG  
CTTTTGGATTTTTTCGCAGCTTTTTCTGTGATTTTGTGGTTTTCTCGCATT  
TCAATTGAAAAAAAACGGGTTTTAAATAATTTTACCTGAAATTTGCTAAA  
AACGAGGAAATTTATTACAAATGCAAAAAAGACTGGAGGCACCACCGAAA  
CCGAATGCAGCTCAGAACAGGATTTACCAAAACAGGATGCAGTAGGCGGAG  
CCAATTCGCAACCACCGCATGCTTATTTGCATGCCTCGCACGTTTTTTTTT  
CTCTTGAAACAATGCAACAATATCAAGGAAAAACGTGCGAGACTTGCGAAA  
TAAGCATGCGGTGGTTGCGAATTGGCTCCGCCCACTGCATTCTGTTTTGGT  
AAATCTGTTCTGAGCTGCATTCTGTTTTGTTGGGGCTTCCAGTCTTTTTGT  
GCATTTTAAATGGAATTTCTTCGTTTTAGCGAAATTTAGGTTAAAATTATT  
AAAACCCGTTTTTTTTCAATTGGAAATGCGAGGAAAAACCACAAAATCACA  
GAGATAGCGAGGCCCCACGAAAAGGGGAGCAGAACAAAAAGGGGGGGG  
GGGGGCTGGCACTGTGCCAAACGCACAAACGCTTTTTATTCTTATTCAACG  
CACGACTTTGTTATAACCACTCCGTTATTACGCATCGCGCGCTGTTTAGC  
GTGAAAATACAAAAAACGTCGTGCGTTGAATGAGAATAAAAAAGCGTTTTG  
TGCGTTTGGCACAGTGCCAGCTCTCCTTTTCGCAGATCCCCTTTTCGTGGG  
GCCTCAGAGAAAGCTGCCATAAACTTTTTCTTCGCGCTAAGACCAATACCA  
ATAAATCCTTGCGCCTTAATATGCAAACTATATTTTCTTCCAGAACCTTCC  
GTGCTCGAAACAGTTCGCTTGGTACCGAAGAAGAAACCGATGATCTAAGCC  
CGAAATCTCTGTATTTGCTCGCAGTAATCGGTTTCGATTCAACGATGATGA  
AACTGAACGGGAATGGACTTCAAGATGCCAACAATCATCGTGGAGAGATAC  
AGAGGTGGATGATGAGCTGAAAAAGCGGGAAACAACGTCTGAAAGTGAGAT  
TTTGAACGATTTACCTGGGAAAATAGATTATTTGGGCCTATTTTAATTATTTA  
ATTGCAGAATTTACCGAAACCACGACGAATGGAAGTACCAAAACACACACA  
GAATCGGATGATAGTGAAGTTGAACGGATGGAGGTTGATGATCAAGTTGAT  
GAAGCTCAAATAACTGTATCATCATCAAAGACGATGGAATGAATGGAAATG  
ATAAGAACGAGGATGAAGAAGATGATGATGATGATATGGATGTAGATGAACA  
TCAGACTGTGGTGGGTGTGCATCAGCAGCAGCAGCAGCAGCATCACCAGC  
AAAAAGTTCCGCATCAATGAATGGTGGTGGTGGTGGTGGTGGAGTGGTAA  
AACTGAAACCGCCGCTGCAAGAATTTCCGCCCGCTTTCCGGAAACGGAA  
GAGCGGACAGAGCGGAACCGACGCCGGTTCCGGCAAAGGTAGTGAGGCTT

FIGURE 16

TTTTAAATACTCGAAAAAGAAGGAAAAATCCCACTTTTAAAAATACGAT  
 TCTTAAAAATGCGAATTCCTCCAAAATGAGAACTCTGATTGGCCAGGGAGC  
 TCTCATTTTGAATGGAAATTAGTCAAATGAAAAATCCCGTTTTTTTTTAAG  
 TTGGATTTTTCATTTCTCGCGATTTTTCCGCGTTTCTGTGTCATTCTGAA  
 TTTAACATTTAATAAATTAATAATGTCTGGAATATTGACAAATTATGCTTCAAA  
 TTTTTGCGCGGGAGTTCAAAAATAATTTGGCCCTTTTTATTTTTATTTTGCA  
 AAAATATATAAAAAATCATTTTAAAAATTTAGAAACATTTTTAATTTTTTAA  
 CAGTTATATTGCTATATTGGGACGGTATTCTGTCAATAACTTGGTGTGTC  
 GAATTTTTTTTTATTGCTTTATAAGACTCAAATTTGTCTGAAAACACCGAATTT  
 ATAATGAACTTCTTGAAACTTCTCAAAAAAAGTTATGACGGCTCAAAAAA  
 TGACCTAAAATTTGTTAAAATTTGAAATTTGACTTGTGCGAACGGCTGGAAAC  
 AATTTTTTTTTTTGAAATCACCGTCAAATTTGAGTATAAAATTTAATTATTTG  
 CGTTTTCAACTCGATTTTTGGTATTTTCAAGTCGATGGACGGCAAGATTTGG  
 TAAAAAATTAAGCCGTCATTTTCTCGCCGTCCATTGACTTTAACTACC  
 TAAATCGAGTTGAAAACGCAAGATAATTGACATTTATACCCAAAATTTGACTG  
 TGGTTTTAAAAAGTTAGTTTCCAGCCGCTGCGACAAGTCAAATTTCCAATTT  
 TAACTATTTAGGCCATTTTTGAGCCATCATAACTTTTTTTGAGAAGTTTTT  
 AAGAAGTTTCATCATGAAATTCGGTGTTCAGACAATTTGAGTCTAATAAA  
 GTAATTTAAAAAATTCGACAGACACCACCTTATAGCAATTTGAATTTTTT  
 TAAACTGTCTTGAAAAATCTTGAAAAAGTCGAATAAATCCCATTTTCT  
 ATTTCTTTTTGCAGATGTGCGGAACGGTGTGCGGACTCAGATGATTGGAGA  
 GAGCCGAGTGGATCACCATCAGAATCGAATTCATCAACCGAATGGGGTGGC  
 TATACGCCACAAGAACAGCATGCAGTTGTTGTTGCCAACGCGGTAGCTGTC  
 GCTTCAAGGAAAAATTGATGAATGGCGTGGATGATGATGATGATCAACAAC  
 CATCGCCGGCTAGAGGAGCACGAGATCATTCCATCAAAGAGTTCGTTAGTT  
 TTTCTTGGCTTTTTTTTTTTGATTTTGGAGAGCAAATTTGAAAAGTTTTACA  
 CGGTTTTGAAAACTGTTGAAATTAATAATTTGTTGAGAATTTGATTTGAGC  
 AAGTTTTATTTTAAAAAATTGAATTTTCAAGAAATCTGAGTTTTCTTTTTAA  
 AAAATTGAAATTTTCAAGAAATCTGAGTAGCAAGAATCTTAAGATCCTTAA  
 TTTCTATGCAAGAATACGTAGGAGTTTACTTTGCTCAGGAAATTTATTTTTT  
 GTCAGAGGAGTATATCCGAAAAAGAACAAAAAAATGCACATTTCTCAAAAC  
 GCGTATTTTTTTTTTCAAGTCGATGTCAACGGTAACACTGCTGGAACGGAAAA  
 AGTTCATGATGCCGTCGACAATCGGTCTAATAATTTGAACTCTCTGCTGCTGC  
 TTCTGCTACTGCTGCTACTGCTGCTCATCGCCAATTTTCAATCCTCCTGAGA  
 TTTTTGATGGTCATTGTTTGTGTCATATCTCTCTCTCTCTCTCTCTCTC  
 CCATGATTCTCAAATATTTCAATGTATTTACACCCCCACTCTGTCCGCTGCCT  
 AATCCCCGACCGAATAATCAGATTCGCTGGAAAAATCTGCGATTCTTTAATA  
 TTGCAACCACCCACCCAATAATATGTGTCTCATCATCTCGGTACTCTCACTT  
 GAGCCGTGTTTTCTGTAGTATTTATTCTCTAAAAAAAATCATTTTAAATATA  
 ATATACGTACACATTTATATCTGTAATATATTTTTAAAAATGATTCCCCCT  
 CCCCTCCATTCGTTGTTTTTTTTCTGTGGGTTTCAAGCTTTGAGCTGTGAAA  
 AATCTCATCCCATCATATTTCTATTGTTTTTTTACAGTTGAAATATCCTA  
 TTTATCTTTTCTTTTTTTTTTCAATTTTTTTTTTTCATCGTGGGGGATTCAAT  
 TTTGCTCCCGCGAAACGCCCGCCGCGCCCAATCCCACTCTCTCTCTCAGT  
 CTCTTCTAATGATCTTCGAAACTATTTTTATTTCCCTCATTAACAATTACGAG  
 GTCGTCTTTTTTTTTTCCCCACCCCCCACTGTTTGGTGTAAATTTTGTGTTCCG

FIGURE 16

GGAGGTTTTTGTGTGTGGATTTTTGGATTTTTGGATTTTTCAACAAAAA  
TTCCCCCGAAATCAAATTTTTTCCCATTTTCCCCTCAATATTAGTACTGTTG  
TATAAATAAACTTGCTCTCTCTCTCTCTCGAAATCTCCTACTATTATTTTT  
TAAAAGATTTTTCCAACAAAAATTCAAAAAACCAACAAACGACCTCTCTGCA  
CGCGGTAATCCTCTCTCTTTTTGTCCCCCATTTTCTCTGTTTCTCTTTTTTCT  
ATCCCCTATACCTGTGATTGGAATATC

FIGURE 17

*epc-1* ORF

ATGGCCACTACTTCGAAGGCGTTTCGAGCCCGGGCGCTCGACTCGAACCG  
 GTCTATGACTGTATACTGGGGCCACGAACCTCCGGACCTATCAGAATGCAG  
 TGTTGGAAACCGGGCGGTGACACAAATGCCGTCTGGCATGGAAAAAGAAGA  
 AGAACAGGAAAAACACCTGCAAGAAGCGATTGCTGCCCAGCAAGCCAGTAC  
 ATCGGGTATTCAAGCTGAACCATGTCATTCCAACCTCCAAAAGTCGACCGAGTC  
 GAAGATCAACGCTATCACTCCACTTATCACAACAAGAATAAAATGCACCGTT  
 CAAAGTATATCAAAGTTCATGCCTGGCAAGCACTCGAACGAGACGAACCCG  
 AGTATGACTACGACACAGAAGATGAAGCATGGCTATCAGATCACACTCACAT  
 TGACCCGCGCGTTTTGGAAAAGATATTGACACAGTGGAGAGCCATTTCATC  
 GGAGACACAGATCGCGAGCGAAGATTGCGGTGATTAATTTGCATAAATCACT  
 GGACTCATCAATCGTGTACGAAATATACGAATATTGGCTGTGGAAGCGAACA  
 TCGGCTGCGACGACGTCTGGTTGTGTTGGAGTCGGTGGATTAATTCGAGA  
 GTCAGGACAGAATGTCGGAAGGATGGACAAGGTGTTATCAATCCGTACGTT  
 GCATTCCGTGACGTGCCGAGAAAATGCAGACTCGAAAGAATCGGAAAAAC  
 GATGAAGATTCTGATGAGAAGATTCTCAAGTTGGTACATGACATGTCGAAAG  
 CTC AACAGCTCTTCGATATGACTGCCCGACGAGAAAAGCAGAAGCTCGCGT  
 TGATTGATATGGAATCGGAGATTTTAGCGAAACGAATGGAGATGTCAGATTT  
 TGGTGGTTCTCCGAGTTCGTTCAATGAGATCACCGAAAAGATTCGAGCAGC  
 AGCAACGTTGGAAGTCGTGAAACCACCACTGGCAGAAATCAACGGATCAGA  
 TGAAGTGAAGAAGAGGAAGAAGCCGAGACGAAAGATTGCTGATAAGGATTT  
 AATATCGAAAGCCTGGCTTAAAAAGAATGCAGAAAGTTGGAATCGGCCGCC  
 GTCGCTCTTTGGACAACACAGTGGAAATGTTCCGACGGTTACAACGAAGCC  
 AGTTCGAGAGTCGTTGGCGAATGGGCGATTTGCGTTCAAGCGGAGGAGAG  
 GATGTGTTTATCGCGCGGCTCTCACCGTTTACAATGTGCCTACAGCGCCTG  
 CTACAGTACCTCCAGTACAGACTCAAGCAGCAGTGGCTTCATCATCATCGTC  
 AAAATCAACGGATATGGTGCCGTGCAACATGAAGTTCTTTGAAACTTTTGT  
 CGGGATTCACAGGATTCAGTTTCTCGATCTTTGGCTTTGTACGCCGACGAA  
 TGGGACGAGGTGGGCGAGTTGTATTGATCGGATGCCTCGCAATCGAGAC  
 GACAACGACGAACGCACTTCGACAGATCCATGGGCCGAGTATTGTGTGCGG  
 GATAGTTCAAGAACCTTCCGTGCTCGAAACAGTTCGCTTGGTACCGAAGAA  
 GAAACCGATGATCTAAGCCCGAAATCTCTGTATTTGCTCGCAGTAATCGGT  
 TCGCATTCAACGATGATGAAACTGAACGGGAATGGACTTCAAGATGCCAAC  
 AATCATCGTGGAGAGATACAGAGGTGGATGATGAGCTGAAAAAGCGGGAAA  
 CAACGTCTGAAAAATTTACCGAAACCACGACGAATGGAAGTACCAAAACACA  
 CACAGAATCGGATGATAGTGAAGTTGAACGGATGGAGGTTGATGATCAAGT  
 TGATGAAGCTCAAATAACTGTATCATCATCAAAGACGATGGAATGAATGGA  
 AATGATAAGAACGAGGATGAAGAAGATGATGATGATGATATGGATGTAGATG  
 AACATCAGACTGTCGTGGGTGTGCATCAGCACCAGCAGCAGCAGCATCACC  
 AGCAAAAAGTTCGGCATCAAATGAATGGTGGTGGTGGTGGTGGTGGAGTG  
 GTAAAATGAAACCGCCGCTGCAAGAAGTTTCGCCGCCGCTTTCCGGGAAAC  
 GGAAGAGCGGACAGAGCGGAACCGACGCCGGTTCCGGCAAAGATGTGCG  
 GAACGGTGTGCGGACTCAGATGATTGGAGAGAGCCGAGTGGATCACCATCA  
 GAATCGAATTCATCAACCGAATGGGGTGGCTATACGCCACAAGAACAGCAT  
 GCAGTTGTTGTTGCCAACGCGGTAGCTGTCGCTTTCAAGGAAAAATTGATG  
 AATGGCGTGGATGATGATGATGATCAACAACCATCGCCGGCTAGAGGAGCA

Title: RB PATHWAY AND CHROMATIN REMODELING  
 GENES THAT ANTAGONIZE *LET-60* RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 37 of 91

Customer No.: 21559

FIGURE 17

CGAGATCATTCCATCAAAGATTGATGTCAACGGTAACACTGCTGGAACGG  
AAAAAGTTCATGATGCCGTGACAATCGGTCTATAA

FIGURE 18

**EPC-1 protein**

MATTSKAFRARALDSNRSMTVYWGHLPDLSECSVGNRAVTQMPSGMEKEE  
EQEKHLQEAIAAQASTSGIQLNHVIPTPKVDRVEDQRYHSTYHNKNKMHRSK  
YIKVHAWQALERDEPEYDYDTEDEAWLSDHIDPRVLEKIFDTVESHSSETQI  
ASEDSVINLHKSLDSSIVYEIYEWLSKRTSAATTSGCVGVGGLIPRVRTTECRKD  
GQGVINPYVAFRRRAEKMQTRKNRKNDEDSYEKILKLVHDMСКАQQLFDMTAR  
REKQKLALIDMESEILAKRMEMSDFGGSPSSFNEITEKIRAAATLEVVKPPLAEIN  
GSDEVKKRKKPRRKIADKDLISKAWLKKNAESWNRPPSLFGQHSGNVPTVTTK  
PVRESLANGRFKRRRGCVYRAALTVYNVPTAPATVPPVQTQAAVASSSSSK  
STDMPVPSNMKFFETFVRDSQDSVSRSLGFVRRRMGRGGRVVFDRMPRNRDD  
NDERTSTDPWAEYCVADSSRTFRARNSSLGTEETDDLSPKSLYFARSNRFAF  
NDDETEREWTSRCQSSWRDTEVDDELKKRETTSEKFTETTTNGSTKHTES  
DDSEVERMEVDDQVDEAQITVSSSKDDGMNGNDKNEDEEDDDDDMDVDEHQ  
TVVGVBHQHQHQHQHQKVRHQMNNGGGGGGGVVKLPPLQELSPPLSGNGR  
ADRAEPTPVPKMCCTVSDSDDWREPSGSPSESNSSTEWGGYTPOEQHAVV  
VANAVAVAFKEKLMNGVDDDDDDQQPSPARGARDHSIKDSMSTVTLLERKKFM  
MPSTIGL

Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE *LET-60* RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 39 of 91

Customer No.: 21559



FIGURE 19

**ssl-1 Genomic**

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cagctgatgt tgttgatgga aaaatgacgg ctgcaaagaa gccattggct gcaactgagc 60
caaaagtgca taataaataa atgtgtttct aggatcttct aataattttt tttctgtttt 120
ctagctctaa acttgatatt atttcattct tgttctacca aattcccacg gattctacgc 180
tttatgtttc taaattatta ttctttttta tttatatctg cattttcttc taaaaactct 240
ggtcattttc ttgttttttt cttggttaatt ataaaaatta gtcatacaaa tcttggttaa 300
tatctggcta ttcagtgaac aaaccatttt ccgctctaaa ttcgaccgca atcaatcgaa 360
aaatggctca aaacgatgcc atctggctgc aacccccctg tcgtctctca attttggtga 420
ctctctcgca gccacgcacg cgacgcaacg cactcgctgc gcggtcgag ttctttttca 480
aatttatcgc gccatttttg ttttgctca tatttatcgg ctcacgattg attttcgctg 540
aaaaacgcgc ttaatcgatt cctttttacc tgaaaaatgt tgttccaatt ggaaaaccag 600
ttgaagatcg atgaattttc aagaaaaatca ttcaaatagg caaaaccgcg tgaactttga 660
aattcgattt ttgagttttt tgaagaaaat ataattattt catcatttat gttggtcctg 720
ttggtcctca gcatagaaaa ttcggacatg acattagaaa ttcataataa ctgctcccaa 780
tatcgggatt agaacgattt tcagctcaaa atatggaaaa ttggttacat aaaccgcata 840
ttttagcat taatcttgaa cagctatatg gcattaaaaa aaaatatata tatacattgt 900
ttttctctc gaagtttctc tttttgttct taaaatccgg aatataattt aaaaaaccac 960
ataaatttca atttgcagta cgagttcccc ccgaatcaca atg ccg gca aca ccg 1015
                                     Met Pro Ala Thr Pro
                                     1           5

gtg cgt gct tca agt act cga ata agc aga cgt aca tca tca aga tca 1063
Val Arg Ala Ser Ser Thr Arg Ile Ser Arg Arg Thr Ser Ser Arg Ser
          10                15                20

gtg gct gat gat cag cca tca act tcg tct gcg gtg gct cca cct cct 1111
Val Ala Asp Asp Gln Pro Ser Thr Ser Ser Ala Val Ala Pro Pro Pro
          25                30                35

tca ccc att gcc ata gaa act gat gaa gat gcg gta gtt gag gag gag 1159
Ser Pro Ile Ala Ile Glu Thr Asp Glu Asp Ala Val Val Glu Glu Glu
          40                45                50

aaa aag aag aaa aag aca tca gat gat ttg gaa att atc act cca aga 1207
Lys Lys Lys Lys Lys Thr Ser Asp Asp Leu Glu Ile Ile Thr Pro Arg
          55                60                65

act cca gtc gat cgg cga att ccc tac att tgc tcg att ctt ttg act 1255
Thr Pro Val Asp Arg Arg Ile Pro Tyr Ile Cys Ser Ile Leu Leu Thr
          70                75                80                85

gaa aat cga tcg att cgc gat aaa tt gtacgatttt ttaaatttaa 1301
Glu Asn Arg Ser Ile Arg Asp Lys Leu
          90

ttactttcct caaatccgaa taattattag atcgcgcttc gcgtttctgc atccgcggta 1361
ttttgccttc ccactgaaaa tagcagattt atcgaatttt tagcttaaaa aaaaaatgtt 1421
ttttctgcat ttttcaaaca aaccttttgt aaaacagtga aaatcgaatt tcaaatgact 1481
aaaatgaatt ttttttttgc ccactgggtg tggaatggtt tgaatttgaa gaaatcagcg 1541
ggatttttcg tattttctga atatttttct attaaaaatc ggtttcaaac cattttttga 1601
cttttgaata gaaaaatatt gagaaaatac gaaaaatcca gtaacttcc agcttgttca 1661
aattcaaacc attccacaac cagtggacga aaaaagttca ttttagtcat ttgaaattcg 1721
atttggttg tttgaaaaat gcaaaaaaaa aatatttttt aaagctaaaa atttgataaa 1781
tctgaaaaaa atctgctatt ttcagtggaa aggcaaaata ccgcgaagcg cagcaagcgc 1841

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Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE LET-60 RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 40 of 91

Customer No.: 21559

FIGURE 19

gctctaataa ttattccgct tcgagaagag cgtgtattat ttcattgtta catttcaaaa 1901  
 ttatgaatta atgtttttca g g gtt ctg agc agc ggt cca gtt cgt caa gaa 1953  
 Val Leu Ser Ser Gly Pro Val Arg Gln Glu  
 95 100

gat cac gaa gaa cag att gct cga gct caa cgg ata cag cca gtt gtc 2001  
 Asp His Glu Glu Gln Ile Ala Arg Ala Gln Arg Ile Gln Pro Val Val  
 105 110 115 120

gat caa att caa cga gtc gag caa at gtatgtgaag ctgaaaaatt 2047  
 Asp Gln Ile Gln Arg Val Glu Gln Ile  
 125

gcaccacaaa tcaattattc taatcttgtt ttacag c ata ctc aat ggt tca gtg 2102  
 Ile Leu Asn Gly Ser Val  
 130 135

gaa gat att ctg aaa gat cct cga ttc gca gta atg gca gat ctc aca 2150  
 Glu Asp Ile Leu Lys Asp Pro Arg Phe Ala Val Met Ala Asp Leu Thr  
 140 145 150

aaa gaa cca cca cca aca cct gca cct cct cct cca atc cag aag aca 2198  
 Lys Glu Pro Pro Pro Thr Pro Ala Pro Pro Pro Pro Ile Gln Lys Thr  
 155 160 165

atg caa ccg att gag gtg aaa att gag gat tca gag ggc tca aat acg 2246  
 Met Gln Pro Ile Glu Val Lys Ile Glu Asp Ser Glu Gly Ser Asn Thr  
 170 175 180

gct caa ccg agt gtt ctg ccc agt tgt gga gga gga gag acg aat gtg 2294  
 Ala Gln Pro Ser Val Leu Pro Ser Cys Gly Gly Gly Glu Thr Asn Val  
 185 190 195

gaa aga gcc gcc aaa aga gtgagttttg aagatagatt ggtgtgtataa 2342  
 Glu Arg Ala Ala Lys Arg  
 200 205

aaatgaatgt ttatatattc actgcaactt tttcctcacg agggacgagg aaaagtgggt 2402  
 tctaggccat ggccgaggtg ccgacaagtt tcagcggcca tttatcttgc tttgttttcc 2462  
 gctgttttc tttcgttttt catcgatttt tttcgttttt tcttaataaaa actgataaat 2522  
 aaatattttt tgcagatgct aaaacaattt ccaagtaaaa aaattatgta ttcagtgggc 2582  
 aagcagcggg gaaagtgggt aatgcaatat gatggattac gggaatacaa aacctaaact 2642  
 ttttctgaaa catgatacat acgctgctta aatgctgaga ctacctgatt ttcataacga 2702  
 gaccgctgaa aaagttttga gggttttcaaa attcaaattt tttggtgaaa aagtcgagat 2762  
 tttcgcacaa aaagtgtgaat tctgaaaacc tcaaattttt ttcagcggtc tcgttatgaa 2822  
 aatcaggtaa tttcagcatc atatgtatca tgtttcaaaa aaagttagg tttgtattc 2882  
 ccgtaatcca tcatattgca ttgaccactt tcaccgctgc ttgccactg aatacatgat 2942  
 tttttacttg gaaattgttt tagcatctgc aaaaaatatt tatttatcag ttttattaag 3002  
 aaaaaacgaa aaaaatcggg gaaaaacgaa agaaaacagg cggaaaacaa agcaagataa 3062  
 atggccgctg aaacttgctg gcccctcggc catggcctag aaaccacttt tctcgtccc 3122  
 tcgtgaggaa aaagtgcag tgttattgta aatctcacia gagtctggca tgatttctca 3182  
 aaggcgcatg gatttattca gccctaaaat taaataaatc catacgactt taaaggtgga 3242  
 gttcggaaaa tgaggatttt acttttaaat gtcacaaacta gtcccaaatg ccgaattacc 3302  
 acaaaagaaa aacggaaaaa aattcatcaa gtttgaaaaa aatgcggatg attttggtga 3362  
 aatttcaacg ctcgctaata ttcttaattt gaaccgcgct tttgtccgag ccgcactctg 3422  
 tagaattgca tccgcgctgt ttcttctctc ttccggcgcc ctacttcttt tcgattggaa 3482  
 atgatgaaaa aatgagacaa aactagaatt cacgtagcgc gtcggaaatg atgaaaatat 3542

FIGURE 19

catggatgca	gcagatctac	ggagtgccgc	gcggaacaaac	ggcgcggtaa	ttcaaatgag	3602
gaatattagc	gagagttgaa	atttcaacaa	aatcagccgc	atttttttca	aacttaattgt	3662
atTTTTTTTc	gtTTTTTctt	tgtagtaatt	cggcatttgg	ggctagtgtg	agcatttttaa	3722
agtaaaatcc	tcattttccg	aactccacct	ttaaagggtg	agtaccgaaa	tttgagactt	3782
tgctTTTTtT	ggcccaaatt	ggcccaaaac	taccgaattt	tgtaatgaga	cgttctgaaa	3842
atttatccaa	aaaatgttat	ggcggttcaa	agttcggcaa	aatagggccc	attttcagct	3902
aaaatcaaat	ttttttttcc	aactttttcg	gtgtcgcaac	gtctggagcc	taatttttat	3962
ttattaatca	ctttttaata	aabattgtag	cctttgatta	ggcgtttatt	cgctgattta	4022
agtacattta	tggTTTTtgg	ggcacaaata	aaagtttcat	tttatgcccc	aaaaaccata	4082
aatgtactta	aatcagcgaa	taaacgccta	atcaaaggct	acaatattta	ttaaagagtg	4142
atgaataaat	aaaaattagg	ttccagacgt	tgcgacaccg	aaaaagttgg	aaaaaatttt	4202
gatttttagct	gaaaaatgtgc	cttattttgc	cgcgaacttt	gaaccgccat	aacttttttt	4262
gagaaagaaa	ttttcagaac	gtctcattac	gaaattcggt	agttttaaac	caatttggtg	4322
ctaaaaagtt	tcaaatccca	ataaaacata	ccaaagtctt	gtgaaattac	aataaactat	4382
tcctaaacgt	attataatcc	attctcaatt	cttgacag	gaa gcg cat gta ttg gct		4437
				Glu Ala His Val Leu Ala		
				210		
cga atc gcc	gag ctc cgt	aag aac ggc	tta tgg	tcg aac agt	cgt ctg	4485
Arg Ile Ala	Glu Leu Arg	Lys Asn Gly	Leu Trp Ser	Asn Ser Arg	Leu	
	215		220		225	
cca aag tgc	gtc gaa cct	gaa cgt	aat aaa acg	cat tgg gat	tat cta	4533
Pro Lys Cys	Val Glu Pro	Glu Arg Asn	Lys Thr His	Trp Asp Tyr	Leu	
	230		235		240	
ctg gaa gag	gtc aaa tgg	atg gca gtt	gat ttc cga	acc gag acg	aat	4581
Leu Glu Glu	Val Lys Trp	Met Ala Val	Asp Phe Arg	Thr Glu Thr	Asn	
	245		250		255	
acg aag cga	aaa atc gcc	aaa gtt ata	gct cac gcc	att gcg aaa	cag	4629
Thr Lys Arg	Lys Ile Ala	Lys Val Ile	Ala His Ala	Ile Ala Lys	Gln	
	260		265		270	275
cac cgc gac	aag cag atc	gag att gag	aga gcc gcc	gaa cgg gag	atc	4677
His Arg Asp	Lys Gln Ile	Glu Ile Glu	Arg Ala Ala	Glu Arg Glu	Ile	
	280		285		290	
aag gag aag	cga aaa atg	tgt gca gga	atc gcg aag	atg gta cgg	gat	4725
Lys Glu Lys	Arg Lys Met	Cys Ala Gly	Ile Ala Lys	Met Val Arg	Asp	
	295		300		305	
ttc tgg tcg	tct acg gat	aaa gtt gtg	gat att cga	gcg aag gaa	gtt	4773
Phe Trp Ser	Ser Thr Asp	Lys Val Val	Asp Ile Arg	Ala Lys Glu	Val	
	310		315		320	
ctg gag tcg	agg ctc agg	aag gcg aga	aat aag cat	ttg atg ttt	gta	4821
Leu Glu Ser	Arg Leu Arg	Lys Ala Arg	Asn Lys His	Leu Met Phe	Val	
	325		330		335	
att gga caa	gtc gat gaa	atg agc aat	att gtg caa	gaa gga ctt	gtt	4869
Ile Gly Gln	Val Asp Glu	Met Ser Asn	Ile Val Gln	Glu Gly Leu	Val	
	340		345		350	355
tca tcg tcg	aaa tcc cca	tca att gca	tcg gat cga	gat gat aaa	gat	4917
Ser Ser Ser	Lys Ser Pro	Ser Ile Ala	Ser Asp Arg	Asp Asp Lys	Asp	
	360		365		370	

FIGURE 19

gaa gaa ttc aaa gca cct ggc tct gat tca gaa tct gac gat gag cag 4965  
 Glu Glu Phe Lys Ala Pro Gly Ser Asp Ser Glu Ser Asp Asp Glu Gln  
 375 380 385

aca att gca aac gcg gaa aag tca cag aaa aag gaa gat gtt cga cag 5013  
 Thr Ile Ala Asn Ala Glu Lys Ser Gln Lys Lys Glu Asp Val Arg Gln  
 390 395 400

gaa gtt gat gct ctt caa aac gag gca act gtg gat atg gat gac ttt 5061  
 Glu Val Asp Ala Leu Gln Asn Glu Ala Thr Val Asp Met Asp Asp Phe  
 405 410 415

ttg tac act tta ccg ccg gaa tat ctg aag gct tat ggt ctg acg cag 5109  
 Leu Tyr Thr Leu Pro Pro Glu Tyr Leu Lys Ala Tyr Gly Leu Thr Gln  
 420 425 430 435

gag gat ttg gag gag atg aag cgc gag aaa ttg gag gag cag aag gct 5157  
 Glu Asp Leu Glu Glu Met Lys Arg Glu Lys Leu Glu Glu Gln Lys Ala  
 440 445 450

cgg aag gaa gct tgt ggt gat aat gag gag aaa atg gag att gat gaa 5205  
 Arg Lys Glu Ala Cys Gly Asp Asn Glu Glu Lys Met Glu Ile Asp Glu  
 455 460 465

gttcgtagga tgctcctaaa aaaattacct aaaaaaaatc gattttccct ggaaaaaatc 5265  
 ctctggaaat gacccgaaac gtcattggcg ctcgaaattt tgaaaaaaa aaccccccaa 5325  
 atttccagct aaaatctcaa attttattgc atattttggt agttcttttg ttgtccgagg 5385  
 tgcgtttttc agctgaaaat gtacctgaat ctgcaagtaa acgaccaata tatgcaataa 5445  
 atgatgataa ttaattttccg atactgaaat gtgggcgaaa tttgagattt cgactgaaaa 5505  
 cgtcttaaaa atcacccaaa acccggttt accgcacgaa ggtttggaaga aaatggccaa 5565  
 tttttagcca aaatctcaaa tttcgtccac ttttcagtca gaaattagtt ttttgaaatt 5625  
 aattaacacc ttttattgca tattttcgtc gttttattcgt tgatcgagggt gctttttcgg 5685  
 tcgatgggtg cacaaattcg gtaattgtgc atccatcggc tgaaaatgct ccagaatttg 5745  
 cgaatgaacg gtgaaaattt aagatttttag attgaaataa gccgtttttt agagaaaatt 5805  
 ggtcgttttg agacattaaa ttcaatttaa atcccctctt tattttcag agc cca tca 5863  
 Ser Pro Ser 470

tca gat gct caa aag cct tcc acc tca agc tca gat ctc acc gcc gag 5911  
 Ser Asp Ala Gln Lys Pro Ser Thr Ser Ser Ser Asp Leu Thr Ala Glu  
 475 480 485

cag ctt caa gat cca aca gct gaa gac ggc aac ggt gat ggt cat ggt 5959  
 Gln Leu Gln Asp Pro Thr Ala Glu Asp Gly Asn Gly Asp Gly His Gly  
 490 495 500

gta ctt gaa aac gtg gat tac gtg aag ctc aac agt cag gat agt gat 6007  
 Val Leu Glu Asn Val Asp Tyr Val Lys Leu Asn Ser Gln Asp Ser Asp  
 505 510 515

gaa cga caa caa gag ttg gcg aat atc gca gaa gaa gcg ctg aaa ttc 6055  
 Glu Arg Gln Gln Glu Leu Ala Asn Ile Ala Glu Glu Ala Leu Lys Phe  
 520 525 530

cag cca aaa gga tat aca ctt gag acg aca caa gtc aag acg ccc gta 6103  
 Gln Pro Lys Gly Tyr Thr Leu Glu Thr Thr Gln Val Lys Thr Pro Val

Title: KB PATHWAY AND CHROMATIN REMODELING  
 GENES THAT ANTAGONIZE LET-60 RAS SIGNALING  
 Applicant(s): Horvitz et al.  
 Filing Date: September 12, 2003 Serial No.: N/A  
 Page 43 of 91 Customer No.: 21559

FIGURE 19

535	540	545	550	
cca ttc ctg att cga gga caa ctg aga gaa tat caa atg gtt gga ttg				6151
Pro Phe Leu Ile Arg Gly Gln Leu Arg Glu Tyr Gln Met Val Gly Leu				
	555	560	565	
gat tgg atg gtt aca ctt tat gag aag aat ttg aat gga att ctt gcc				6199
Asp Trp Met Val Thr Leu Tyr Glu Lys Asn Leu Asn Gly Ile Leu Ala				
	570	575	580	
gac gag atg ggc ctg gga aag acg att caa acg att tcc ctg ctg gct				6247
Asp Glu Met Gly Leu Gly Lys Thr Ile Gln Thr Ile Ser Leu Leu Ala				
	585	590	595	
cat atg gct tgt agt gaa tgc att tgg gga cca cac ttg att gtt gtg				6295
His Met Ala Cys Ser Glu Ser Ile Trp Gly Pro His Leu Ile Val Val				
	600	605	610	
ccg acg tct gtc att ctg aat tgg gag atg gag ttc aag aaa tgg tgt				6343
Pro Thr Ser Val Ile Leu Asn Trp Glu Met Glu Phe Lys Lys Trp Cys				
	615	620	625	630
ccg gct ctg aag att ttg acg tat ttt ggt acg gcg aag gag cgt gcc				6391
Pro Ala Leu Lys Ile Leu Thr Tyr Phe Gly Thr Ala Lys Glu Arg Ala				
	635	640	645	
gag aag cgg aag gga tgg atg aag ccg aat tgt ttc cat gtg tgc atc				6439
Glu Lys Arg Lys Gly Trp Met Lys Pro Asn Cys Phe His Val Cys Ile				
	650	655	660	
aca tca tac aag acg gtt act caa gat att aga gct ttt aag cag agg				6487
Thr Ser Tyr Lys Thr Val Thr Gln Asp Ile Arg Ala Phe Lys Gln Arg				
	665	670	675	
gtgcgtagaa attttgaaga tttgcggcga atttggcgaa tttgcataat ttttttaaaa				6547
ccaatttttac cgataattgc gaaatttttc aatttttatac agtggtcgga aattgctata				6607
attagtataa tttttgcaaa aattggtaact tttttcgaaa ttttgaacca ccataaaaca				6667
tttttgaaca atttttaaga ggtttaataa cgaaattcgt tcatttgaac acattttggc				6727
gatatgaatc gcccgaataa gtccccaat agacctaat tcttaacaaa aattttaaaaa				6787
aaaaatggccc aaaattgtct caaaatttcg aaaaaaaaaac cgtaatttca gctgaaatct				6847
caaaatttgc caaattttcc gtctcacgga gatcagaaaa agttttttgc atttttttgt				6907
ggtttatttt agcgttattt cgtaatttga gatacatttt agcccaattt ttgcaaaaaat				6967
tatactaatt atagcaattt ctgacccctg acaaaactttg aaattatcgg taaacttggt				7027
ataaatgggt tttttccaaa tttttaaaagc gatattaaag gtggagtacc acaatttgag				7087
gctttgtttt tttttttgga cccaaattgg tccaaaaacta ccgaatttcg taatgagacg				7147
ctctgaaaat ttctttctca aaaaaaaagt tacggcggtt caaagttcgc ggcaaaaataa				7207
ggcccathtt cagctaaaaa caaaattttt tcccaacttc tcggtgtctc aacgcctgga				7267
acctaatttt tatatttca tcaacttttta ataaatattg tggcttttga ttgggctttt				7327
attcgttgat ttaagtacat ttatggtcag tggggcacaa aatgtaactt tttttcccaa				7387
agaccataaa tgtactttta tcaacgaata aacgcccatt caaagaccac aatattttatt				7447
taaaagtaat gaataaataa taattaggtt ccagacgttg cgacaccgag aagttgga				7507
atttttttat tttagctgaa taagggcctt attgtctcaa actttgaacc gccataactt				7567
ttttttgaga acgtctcgtt acgaaattcg gtatgttttg accaatttgg gtctaaaaaa				7627
acaaagtctc aaatttcttg ttagagattt tttaaaaaatt gatatttttt ttttcag gcc				7687
				Ala

Title: RB PATHWAY AND CHROMATIN REMODELING  
 GENES THAT ANTAGONIZE LET-60 RAS SIGNALING  
 Applicant(s): Horvitz et al.  
 Filing Date: September 12, 2003  
 Serial No.: N/A  
 Page 44 of 91  
 Customer No.: 21559

FIGURE 19

tgg cag tac cta att ctc gat gaa gct caa aat atc aaa aac tgg aag	7735
Trp Gln Tyr Leu Ile Leu Asp Glu Ala Gln Asn Ile Lys Asn Trp Lys	
680 685 690 695	
tcc caa cgt tgg cag gct ctt ctg aat gtc cgt gct cga cgt cgc ctt	7783
Ser Gln Arg Trp Gln Ala Leu Leu Asn Val Arg Ala Arg Arg Arg Leu	
700 705 710	
ctc ctg acc gga act cca ctt cag aac tct cta atg gaa ctg tgg tcg	7831
Leu Leu Thr Gly Thr Pro Leu Gln Asn Ser Leu Met Glu Leu Trp Ser	
715 720 725	
ttg atg cat ttt ttg atg cca aca ata ttc tca agt cat gat gat ttc	7879
Leu Met His Phe Leu Met Pro Thr Ile Phe Ser Ser His Asp Asp Phe	
730 735 740	
aag gat tgg ttc tcg aat ccg ttg aca ggg atg atg gaa gga aat atg	7927
Lys Asp Trp Phe Ser Asn Pro Leu Thr Gly Met Met Glu Gly Asn Met	
745 750 755	
gaa ttc aat gct cca cta atc gga cga ctt cac aaa gtg ctc cgt ccg	7975
Glu Phe Asn Ala Pro Leu Ile Gly Arg Leu His Lys Val Leu Arg Pro	
760 765 770 775	
ttt att ctg cgg cgg ctc aag aag gaa gtt gag aag cag ctg cca gag	8023
Phe Ile Leu Arg Arg Leu Lys Lys Glu Val Glu Lys Gln Leu Pro Glu	
780 785 790	
aag act gag cat att gtg aat tgt tcg ttg tca aag cgg cag aga tac	8071
Lys Thr Glu His Ile Val Asn Cys Ser Leu Ser Lys Arg Gln Arg Tyr	
795 800 805	
ctg tac gat gac ttt atg agt cgt aga tca aca aag gag aat cta aag	8119
Leu Tyr Asp Asp Phe Met Ser Arg Arg Ser Thr Lys Glu Asn Leu Lys	
810 815 820	
tct gga aat atg atg tcg gtg ctc aac att gtg atg caa ctc cga aaa	8167
Ser Gly Asn Met Met Ser Val Leu Asn Ile Val Met Gln Leu Arg Lys	
825 830 835	
tgt tgt aat cat ccg aat ctc ttc gag ccg cgg cca gtt gtt gct ccg	8215
Cys Cys Asn His Pro Asn Leu Phe Glu Pro Arg Pro Val Val Ala Pro	
840 845 850 855	
ttc gtc gtt gag aag ctt cag ctc gat gtt ccg gct cgt ctc ttt gaa	8263
Phe Val Val Glu Lys Leu Gln Leu Asp Val Pro Ala Arg Leu Phe Glu	
860 865 870	
att tcg cag caa gat ccc tcc tcc tcc tca gct agt caa att ccg gaa	8311
Ile Ser Gln Gln Asp Pro Ser Ser Ser Ser Ala Ser Gln Ile Pro Glu	
875 880 885	
att ttc aat tta tcc aaa atc ggc tat caa tct tcc gtt cga tct gca	8359
Ile Phe Asn Leu Ser Lys Ile Gly Tyr Gln Ser Ser Val Arg Ser Ala	
890 895 900	
aaa cca ctc atc gaa gag ctt gaa gca atg agc act tat ccg gag cca	8407

FIGURE 19

Lys Pro Leu Ile Glu Glu Leu Glu Ala Met Ser Thr Tyr Pro Glu Pro  
 905 910 915  
 cga gca cca gaa gtt ggc gga ttt cgg ttc aat cgg acg gct ttt gtt 8455  
 Arg Ala Pro Glu Val Gly Gly Phe Arg Phe Asn Arg Thr Ala Phe Val  
 920 925 930 935  
 gca aag aat ccg cat acg gaa gag tcg gag gac gaa ggt gtt atg aga 8503  
 Ala Lys Asn Pro His Thr Glu Glu Ser Glu Asp Glu Gly Val Met Arg  
 940 945 950  
 agt cgt gtt ctg gtgaattttt aggaaaattg agaaaatgat ctaattgttg 8555  
 Ser Arg Val Leu  
 955  
 aatttttttaa agaatttatg ggccacaagc cgatttgccg gaaattttga tttttggcga 8615  
 tttgccgaaa-attttgattt ttggcgattt-gccagaaatt-ttgatttttg gcaattatcc 8675  
 gatttgccgg aaattttgat tttttggcat ttgccagaaa ttttgatttt tggcaattat 8735  
 ccgatttgcc ggaaattttg aattttggca attttccgat ttgccggaaa ttttgatttt 8795  
 tggcaatttg ccgaattgcc ggaaattttg atttttggca atttgccgaa ttgccggaaa 8855  
 ttttgatttt tggggatttg ccggaaattt tgatttttgg caatttgcct atttgtcgga 8915  
 aattttgatt tttggcaatt tgccgatttg tcggaaattt tgatttttgg caatttgccg 8975  
 atttgccgga aattttgatt tttggcaatt ttccgatttg ccaaaaattt tgatttttgg 9035  
 cgatttgccg atttgccgga aaaacatttt gtgagccaat tttctcgaaa tttgggcttc 9095  
 aatattttca aattattcca aattttccac tgattccgaa tatctaagta aaaaaaatt 9155  
 ccctgatttt atatttcagc ttaaaatcgc taattttcgc gtcagagacg acgtcatgtg 9215  
 tcgatttact ggatttttaa tctttgtcgg atgctaattt ccgtttttca acgagtttcc 9275  
 ttcatttcca tcggtttttg acgaagtttt ctttgaaaat atgttcttaa ggtcaattaa 9335  
 acgtttttatt atcaaaaaaa actagcaaaa ttggctttta aaacacattt tcacagaaaa 9395  
 ctccgacaaa aaccgacgaa aatgaaggaa acccccgtt tgaaaacaga aattagcatc 9455  
 tgataaagat taaaatcccg taaatcgaca catggcgtct ggcgtctctg gcacgaaaag 9515  
 tcgcgatttt aagctgacat acaaaaaaag agggatatat ttttttacga atttttcaca 9575  
 tagataattc aaatcagggg ggaaaatttg gagaaatttg agaaaatttc tcagatttcg 9635  
 gattaaaaat attcaatttt tgttttctta tattaaaaa aaattaactt ttataatttt 9695  
 tcag cca aaa cca att aat gga aca gct caa cca ctt caa aat gga aat 9744  
 Pro Lys Pro Ile Asn Gly Thr Ala Gln Pro Leu Gln Asn Gly Asn  
 960 965 970  
 tca ata cca caa aat gct cca aat cgt cca caa act tca tgc att cgt 9792  
 Ser Ile Pro Gln Asn Ala Pro Asn Arg Pro Gln Thr Ser Cys Ile Arg  
 975 980 985  
 tca aaa acc gtc gta aat aca gtt cca ctg acc atc tcc acc gat cga 9840  
 Ser Lys Thr Val Val Asn Thr Val Pro Leu Thr Ile Ser Thr Asp Arg  
 990 995 1000  
 agt ggt ttt cat ttt aat atg gcc aat gtt gga aga ggt gtt gtt cgt 9888  
 Ser Gly Phe His Phe Asn Met Ala Asn Val Gly Arg Gly Val Val Arg  
 1005 1010 1015  
 ttg gat gat tca gca cgt atg agc cca ccg ctg aaa cgt cag aag ctg 9936  
 Leu Asp Asp Ser Ala Arg Met Ser Pro Pro Leu Lys Arg Gln Lys Leu  
 1020 1025 1030  
 acc gga act gca acg aat tgg agt gat tat gtt ccg cga cac gtt gtt 9984  
 Thr Gly Thr Ala Thr Asn Trp Ser Asp Tyr Val Pro Arg His Val Val  
 1035 1040 1045 1050

Title: RB PATHWAY AND CHROMATIN REMODELING  
 GENES THAT ANTAGONIZE LET-60 RAS SIGNALING  
 Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A  
 Page 46 of 91 Customer No.: 21559

FIGURE 19

gaa aag atg gaa gaa tcg aga aaa aac cag ctg gaa att gtt cga agg 10032  
 Glu Lys Met Glu Glu Ser Arg Lys Asn Gln Leu Glu Ile Val Arg Arg  
 1055 1060 1065

cga ttt gag atg att cgt gct ccg att att cca ctg gaa atg gtt gcg 10080  
 Arg Phe Glu Met Ile Arg Ala Pro Ile Ile Pro Leu Glu Met Val Ala  
 1070 1075 1080

ctg gtt cga gag gaa att att gca gaa ttt cca cgt ttg gct gtg gaa 10128  
 Leu Val Arg Glu Glu Ile Ile Ala Glu Phe Pro Arg Leu Ala Val Glu  
 1085 1090 1095

gag gac gag gtt gtg cag gag agg ctt ttg gag tat tgc gag ttg ttg 10176  
 Glu Asp Glu Val Val Gln Glu Arg Leu Leu Glu Tyr Cys Glu Leu Leu  
 1100 1105 1110

gtg caa aggtagaatt ttgaaaatta ttactttgct tttttttaaa ccaaaattgg 10232  
 Val Gln  
 1115

ccccaaacta ccgaatttcg taatgagaca ttctgaaagc ttctcaaaaa aaaagttttg 10292  
 gccgctcaaa gttcgggaaa ataaggccca ttttcagctg aaatcaaaat tttttccaac 10352  
 ttctcgggtg cgcaacgtct ggaactaaaa ttttgaaaa cgagaaattt tccatttttt 10412  
 gcaagctgaa aaatcaaagt ttttttttcc tcaaaattgg acaaacaaaa aaattttttt 10472  
 ttgaaaattg atcgaaaaaa ttcaaaattt ctataatttt tcgatttttt aaataaaact 10532  
 ttcatcattt ttcttccaaa tttagttttc tcgattttta cttttttcaa aaaaaaattt 10592  
 tttatacga aaaaaattca attttagctc taattctttt ttagacccaa attggtccaa 10652  
 aactaccgaa ttctgtaatg agacgttctg aacattttct aaaaaaaagt tatgacgggt 10712  
 caaagtccg caaaataagg cccattttca tataaaatca aatttttttt ctaacttctc 10772  
 ggtgtcacaa cgtctggaac ttaattttta tttattattt acttttcaat aaatattgtg 10832  
 gtctttttat aggcgtttat ttgttgattt aagtacattt atggtcaagt ggggccccaa 10892  
 taaaagttac attttgtgcc cacatgacca taaatgtact taaatcaacg aataaacgcc 10952  
 taatcaaaagg ccacaatatt tattaanaag tgttgaataa ataaaaatta ggtccagac 11012  
 attgtgacac cgagaagtta aaaaaaattt tgatttttagc tgaaaatggg cttatttttg 11072  
 ctgaacttta aaccgctata actttttttt gagaaatttt cagaacgtct cattacgaaa 11132  
 ttcggtagtt ttggaccaat ttgggtctaa aaaagaatta gagctaaaat tgaattttct 11192  
 tcgtattaaa aatttttttt ttgaaaaaag taaaaatcga gaaaactaaa tttggaagaa 11252  
 aaatgatgaa aatttttatt aaaaaatcga aaaatttatag aaattttgat cgattttttc 11312  
 gatcaatttt caataaaaaa ttttttgttt gtccaatttt gaggaaaaaa aaaactttga 11372  
 tttttcagct tacaaaaaat ggaaagtttc tcgttttcca attttttgat gtggattttt 11432  
 atgagaaaaa atatataatg tcacaaaaaa tagattatta tctaaaaatc gaaaaaatta 11492  
 aattttccag ttttcaggaa aaaaatcggt aagaaattgt ttttccatta aagggtggagt 11552  
 accgaatttt gagacgtgc ttttttagac ccaaaatggt ccaaaactac cgaatttcgt 11612  
 aatgatacgc tctgaaaaat tttcaaaaaa aaagtgtgga ccgctcaaag ttttgaaaaa 11672  
 atggcatatt tttagctaaa atctcaaatt ttggcaactt atcggtgtcg cagcgggttg 11732  
 aacttaattt ttatttaatt gtcattcatt aatgcatggt ttggcatttc attatgtgtt 11792  
 atttcgttga ttgagatgct ttttgtgctt gcatcgacca aaaaaccatc tcaatcaacg 11852  
 aaataacaca taataaaatg ccaaaatagc cattaaagga tgataatcaa ataaaaatta 11912  
 agtttcaacc gctgcgacac cgctaagttg ccaaaatttg agatttttagc taaaaatggt 11972  
 ccattttttt aaaactttga gcggtcacia cttttttttt gagaaatttt cagagcgtct 12032  
 cattacgaaa attggtaggt tcggaccaat ttgggtctaa aaaagcagcg tctcaaaatt 12092  
 cgttacttca cttttaaagt tttcaattta aagtataaat tatccaatca aaaattgacg 12152  
 aaaaaatttt ttaaaaattt tttcttcga aaaaaaattt aattttaatt tttgtt aga 12211  
 Arg



FIGURE 19

ttc gga atg tac gtc gaa cca gtg ctg acc gat gct tgg cag tgt cgt	12259
Phe Gly Met Tyr Val Glu Pro Val Leu Thr Asp Ala Trp Gln Cys Arg	
1120 1125 1130	
cca tca tcg tct ggt ctt cca tca tat att cgc aac aat tta tca aat	12307
Pro Ser Ser Ser Gly Leu Pro Ser Tyr Ile Arg Asn Asn Leu Ser Asn	
1135 1140 1145	
atc gag ctg aat tct cgt tct ctt ctc ctc aac acc tcc act aat ttc	12355
Ile Glu Leu Asn Ser Arg Ser Leu Leu Leu Asn Thr Ser Thr Asn Phe	
1150 1155 1160 1165	
gat acc cga atg tcg atc tca cgt gct ctt caa ttc cca gaa ctc cgt	12403
Asp Thr Arg Met Ser Ile Ser Arg Ala Leu Gln Phe Pro Glu Leu Arg	
1170 1175 1180	
ctg atc gag tac gat tgt gga aag ctt cag acg ttg gct gtt ctg ctt	12451
Leu Ile Glu Tyr Asp Cys Gly Lys Leu Gln Thr Leu Ala Val Leu Leu	
1185 1190 1195	
cgt cag ttg tac ctg tac aag cac aga tgt ctg atc ttc acg caa atg	12499
Arg Gln Leu Tyr Leu Tyr Lys His Arg Cys Leu Ile Phe Thr Gln Met	
1200 1205 1210	
tca aag atg ctc gac gtt ctg cag acc ttc ctt tct cat cac ggt tat	12547
Ser Lys Met Leu Asp Val Leu Gln Thr Phe Leu Ser His His Gly Tyr	
1215 1220 1225	
cag tat ttc cgc ctc gac ggt acc act ggt gtc gaa caa aga cag gcg	12595
Gln Tyr Phe Arg Leu Asp Gly Thr Thr Gly Val Glu Gln Arg Gln Ala	
1230 1235 1240 1245	
atg atg gag cgg ttc aac gcg gat ccc aag gtg ttt tgc ttc att ctg	12643
Met Met Glu Arg Phe Asn Ala Asp Pro Lys Val Phe Cys Phe Ile Leu	
1250 1255 1260	
tcg acg aga tcc ggt ggt gtt gga gtc aat cta acc ggt gct gac act	12691
Ser Thr Arg Ser Gly Gly Val Gly Val Asn Leu Thr Gly Ala Asp Thr	
1265 1270 1275	
gtg atc ttc tac gat tcg gat tgg aat ccg acg atg gat gct cag gct	12739
Val Ile Phe Tyr Asp Ser Asp Trp Asn Pro Thr Met Asp Ala Gln Ala	
1280 1285 1290	
cag gat aga tgt cat cgt atc gga cag acg agg aat gtc tcg att tat	12787
Gln Asp Arg Cys His Arg Ile Gly Gln Thr Arg Asn Val Ser Ile Tyr	
1295 1300 1305	
cga ttg att tcc gag cga aca att gag gag aat att ctg aga aag gca	12835
Arg Leu Ile Ser Glu Arg Thr Ile Glu Glu Asn Ile Leu Arg Lys Ala	
1310 1315 1320 1325	
aca cag aag cgg cga ctt gga gag ttg gca att gac gag gct ggc ttc	12883
Thr Gln Lys Arg Arg Leu Gly Glu Leu Ala Ile Asp Glu Ala Gly Phe	
1330 1335 1340	
aca ccc gag ttc ttc aaa caa tct gac agt att cgg gat ctt ttt aat	12931

FIGURE 19

Thr Pro Glu Phe Phe Lys Gln Ser Asp Ser Ile Arg Asp Leu Phe Asp  
 1345 1350 1355  
 gga gag aat gtg gaa gtg act gct gtg gca gat gtt gcg acg acg atg 12979  
 Gly Glu Asn Val Glu Val Thr Ala Val Ala Asp Val Ala Thr Thr Met  
 1360 1365 1370  
 agc gag aaa gaa atg gag gtt gcg atg gca aag tgt gaa gat gaa gct 13027  
 Ser Glu Lys Glu Met Glu Val Ala Met Ala Lys Cys Glu Asp Glu Ala  
 1375 1380 1385  
 gat gtg aat gcg gcg aag att gcg gtg gcc gag gcg aac gtt gat aat 13075  
 Asp Val Asn Ala Ala Lys Ile Ala Val Ala Glu Ala Asn Val Asp Asn  
 1390 1395 1400 1405  
 gcg gag ttt gat gag aaa tca ttg ccg ccg atg agc aat ttg caa gga 13123  
 Ala Glu Phe Asp Glu Lys Ser Leu Pro Pro Met Ser Asn Leu Gln Gly  
 1410 1415 1420  
 gat gag gag gct gat gag aag tat atg gag ttg ata caa c aggtaaaatt 13173  
 Asp Glu Glu Ala Asp Glu Lys Tyr Met Glu Leu Ile Gln  
 1425 1430  
 cggcggaaat cggaaatttt cccatttaga atatcaaatt ttgcccgatt gtgtcgtttt 13233  
 ttgatttttc gatttattcg atttgttttt gagggaaaat cggaaaaatg ttcagaaaaat 13293  
 taaccataac atgtgatctt tttaaaatct tagcgcaaat gtcttctaaa aaataaagaa 13353  
 tgacaaaaaa ttttaagcta atttttgaaa aaccaaagaa aaaatttaga tttttcgatg 13413  
 ttttccgaga caaaaagaca aaaacggaaa ttgtcgaaaa tgaatgaaat ttttaatttt 13473  
 tcagcaaaaa aaaaatagta cttaatttta aaaaatgtga tcatttcggt aggaaaaatct 13533  
 ggaaaaatcg attttcaaac aaaaaaaaaac cgagcctcta caatcttttt ttttcccgaa 13593  
 atctccagaa cttctcacia taacaactat ataaatttca aaatttc ag ctc aaa 13648  
 Gln Leu Lys  
 1435  
 cca atc gaa cga tat gcc att aac ttt ctt gag aca cag tac aag cca 13696  
 Pro Ile Glu Arg Tyr Ala Ile Asn Phe Leu Glu Thr Gln Tyr Lys Pro  
 1440 1445 1450  
 gaa ttt gag gaa gaa tgc aaa gag gca g aggtatatta ttccattcat 13744  
 Glu Phe Glu Glu Glu Cys Lys Glu Ala  
 1455 1460  
 ctgacttttt tttttttttt ttaaatttaa atttcaccaa attaattac ag gct ctt 13801  
 Glu Ala Leu  
 1465  
 atc gac caa aaa cgc gaa gaa tgg gac aaa aat ctc aac gat acc gcc 13849  
 Ile Asp Gln Lys Arg Glu Glu Trp Asp Lys Asn Leu Asn Asp Thr Ala  
 1470 1475 1480  
 gtc att gac ctc gac gat tcg gat agt ctg ctg ctc aac gat cct tcg 13897  
 Val Ile Asp Leu Asp Asp Ser Asp Ser Leu Leu Leu Asn Asp Pro Ser  
 1485 1490 1495  
 act tct gcc gat ttt tat cag agc tca agt ctt tta gac g aggtacgcga 13947  
 Thr Ser Ala Asp Phe Tyr Gln Ser Ser Ser Leu Leu Asp  
 1500 1505 1510

Title: RB PATHWAY AND CHROMATIN REMODELING  
 GENES THAT ANTAGONIZE LET-60 RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 49 of 91

Customer No.: 21559

FIGURE 19

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tcgtcgtcgt cgcagcagca gccttctcca aaaagccgct caaaaaccgg caaaaaagcc 14007
tcaaaacttc caaatctcgt ctcgctcccc gtctaagcgt aaatctcagg ctcccttcctt 14067
cgatccatat gtttcgtacg caccgcacgc gctcgcttct cccccggatt ccccgcgtaa 14127
gagaagatca cgtggtgcgc gtagtttagg tagtggtggt ggtggtggtg gtggtagtag 14187
atctgttgga agacctgccc gccgatcagt gaagaaagaa gaatcagatg atgatgatga 14247
ggattattgc caagaagagg aagtgaagcg aaatccggca gaaaaggtec cgccgaaaag 14307
aaaacgagtt gtgtttgtgg aacctccaga ggtgaagccg ccggagccga aaaaacgagt 14367
tggtgttcct gtcctcatcat catcatcatc agctctaact actcttcac aacaaggacc 14427
gctgatttcg ttgccaaaag ctgtgccagt tgtacctcgg cccaacaac aagcaccacc 14487
acagctcatc aaaaagcacc agcagactct gatgcctgtg aagggtgctc agattagtg 14547
tggtggtggt ggtactccag gaccatccag tgtatcgcca ggtccatcaa tctccgaag 14607
aaccggtgtt ccaggcatag gcgctggtgg tgttggaagc ctaccgcttg tcagaatgcc 14667
tggtcgccct ccatctctg gctcgcaagc tctgctcca ccgctgagaa gtggtgtg 14727
tccaacagct cctgcagcag ctccacgcca gttcgtcgt ccgctcgtcga gaggtcgagt 14787
tatcacgacg agaactccgg tcgccaccac catggtgcaa caacaacaaa gcccgagccc 14847
gttgatgttt ccagtcgggg ttgtgcaaa gcccgggcca tctggaccac caccacctgg 14907
acctccagat cgcccaggat ttggaatcta tgagaagccg agattctcac ttggatcacg 14967
aagaagccgt ggagattcgg gcccggaaga tccggcgcca ccacagccac caccaccac 15027
cacttctagg ccaccgccac aagcctaggc gctaggattt tctttttttt ttgttgatt 15087
tttgcctttt ttttgctctc tcatgatttt ataactcat tttgctttaa tatttccatt 15147
tttttgatg tgtggaattt ttttttttga aaatcgggaa aaaacgaaaa atttgaactt 15207
tttggtgatt ttcagagaaa aatccgtttt taaatgaaaa aatcggaata attcagattt 15267
ttcgaaaaaa aaaaccgaga aaatttcaaa ttttcagttt tttttttcaa aaaatcgaaa 15327
aaaaaagtaa attttcagaa ttatcagcca agtttttgcg attttttgaa aaatttcaat 15387
ttttggcaat ttttgggaaa aaatcaattt ttaattcaga aaattggaaa aattaagatt 15447
tttcgaaaaa aaaaacgaag aaagtttcaa atttttagct tttttcaaaa aatcgaaaat 15507
cggaattttt ttaatttttc gaataaaaaa aatcgaaaga attccaaaaa ttgcgtttt 15567
ttcttgaaat tatctgaaaa ccggaatttt ttttcaaaat tcgccatttt ttgcgaattt 15627
ttgtaatctt tttccgagaa aactcgattt tttaaatctt aataattcag atttttcgat 15687
tttcttttgt tccaaaaagt caaaaaccga acaattattt atttcaaaaa ctctaaaaat 15747
tttcaatttt ttggaatttt tcgggtataa aaaaaaccca tttttaaatc aaaaaatcgg 15807
aaatttttgt gatttttcga tttttttcac tccaaaaaaa ttccacacag caaaaaataa 15867
actccgcgca tttttgagcg cacctttcaa tgttttaatt cttatcacga cgtcaaaatt 15927
cggttatttt tcacacacac acattttcct cccgagcggg tctttttttc atgagttctc 15987
ccatgttttg tttttatatt tgagacattt ttttttggtg ataagtttca acttcttctt 16047
cttcttctga ctataaacgt ttttctccat gttttttgcc tgttttctgc cgattttttg 16107
acacccaaaa ttttttttca ttttcgctcg aaaatgcacg tcgttggtc tagctttggc 16167
aagtttttaa cactgatttt ctggtttttt tttttttttg cagaattttt cagagatagg 16227
gggctcattc cagcagggtt tcccactata tttcgattt tttccaaaaa tttttgtatt 16287
ttcaaaaatt tccaaaaaga aagggtttt ctttaccaaa tttttctcgc cacttttggc 16347
ttaattttgg ctttagagat tcgatcgaaa aaattgcgaa agtggcgaga aatctcactg 16407
gtttgatgtt tgacccctca ctatagaaaa tttgaaaaaa aaaaaaaaaa aaaaaacta 16467
gacgaaattt gtggaaatct tgctggagtt tgacgagtcg atggtggatt tttcttgaaa 16527
cgaatgaaac ggtgattttg gatcggagaa atatggcgaa aaatggtgag aaatgacgag 16587
gaggaggaag aagctgaaaa tctggaggaa caaaaattgt gtggaagtct cggaagaaa 16647
ttagaattga aattttaaag tgttctgaga attttttgtg tgaaattttt ttaaatctgt 16707
agatcaaata tcaaaaaaaa aaatcagaac tattacgtgt ttatccacaa agatgagaaa 16767
aatcgccata tctggcgcgc aaatgaacc gcgggaagag acaaaactac tgtagttttt 16827
aaccaatttg tgtagattta cgagctattg cgtcatcgaa ttgaatttaa ttttcaggcg 16887
tttcacacgt ttttatattg aaatttatct atttattgaa tcaatcttaa aagaaaacac 16947
aaaaaatttt ttttaaaaat tgcggctcaa aattaaattc aattcgatga cgcaatagct 17007
cgtaaatcta caaaaattgg ttaaaaaacta cagtagtttt gtctcttccc gcgggttcat 17067
ttgcgcgcca gatatggtga tttttctcat ctctggataa acacgtaata acatttctcg 17127
gcacaataaa tttttgctga aacaagtgcg cgcctttgaa gactactgca atttcaaaca 17187
cggttttttg gttggaaagc acagtacttt tcaaaagggtg cacaccttct cgaatttctc 17247
ttcgtgtcga gaccaagaat gccatttttc gattttttaa aaatcaaaaa aaaaattacc 17307

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FIGURE 19

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tttttaaagg tggagtaccg aaatttgaga ctttgttttt ttcggcccaa aatgggtccaa 17367
aactaccgaa tttcgtaatg agacgttctg aaaatttctc aaaaaacaac gttatggcgg 17427
tttaaagttc agcaaaaataa ggcccathtt cagctaaaat caaaattttt tcccagcttc 17487
tcggtgtcac aacgcctgga acctaatttt tatttattca tcactttttg ataaatattg 17547
tggcttttta ttaggcggtt attttattga ttttaagctta tttatggctt ttgtggcggt 17607
acattttgta ccttaaaaaa cataaatgta cttaaatcaa cgaataaacg cctaatacaa 17667
ggctacaata tttagtagaa agtgataaat aataaaaaat taggttccag acgttgcgac 17727
accgagaagt tggcgaaaac tttgatttta gctaaaaata agccattttc ccaaaacttt 17787
gagcgggtcat aacttttttt tgagaaaaga attttcagaa tgtctcatta cgaaattcgg 17847
tagctttggg ccattttggg ccgaaaaagc aaagtctcaa atttcagcac tccaacttta 17907
gcctttacct tggtgaaatt ttttaatctg tagtatactt tatttttggc cgactttttg 17967
aacacaaatt cggtgttagt ttaaaaaaac aatcaaaact aacatattat ccagacgcca 18027
aatttttgtc ggttttcttc gcgccaaaaa gtacggtaac aggtttcggc acgatacatt 18087
tttgtaaataa ggtgctgctc ctttgaagag tgtctaataa ttttcaactt tcgtttctgt 18147
tggaattttc ttcaattttt catagatgtt ttcgatgaaa caaaaaatta acacaaaatc 18207
gtcgtgtcga gacccgaaaa aattttgcgt ctgtgcaaca aacccgaaaa attaaagtag 18267
catattgac caaattgccg atttgccgga aattttgatt ttcggcaata taccgatttg 18327
ccggaacatt tgattttctg gaatataccg atttgccgga atttttggtt ttcggaaatt 18387
tgccggaaat ttgaattcc ggcaatatgc cgatttgccg gaaattttga tttcggcaa 18447
tatgccgatt tgccgaaat tttgattttc ggcaatatgc cgatttgccg gaaattttga 18507
tttccggcaa tatgccgatt tgccggaatt tttgatttcc ggcaatatgc cgatttgccg 18567
gaaattttga ttttcggcaa tataccgatt tgccggaaca tttggtttcc ggcaatatgc 18627
cgatttgccg gaatttttgg ttttcggaaa tttgccggaa atttagaatt ccggcaattt 18687
gccgatttgc cggaaatttt gatttccggc aatatgccga tttgccggaa attttggtt 18747
tcggaaattt gccggaaatt tagaattccg gcaatatgcc gatttgccgg aaattttgat 18807
ttccggcaat atgccgattt gtcagaagaa atcgtttgc acccacacgt gtattgattt 18867
gatttttct ag ata aaa ttc tac gac gag ctg gac gat atc atg cca atc 18917
      Glu Ile Lys Phe Tyr Asp Glu Leu Asp Asp Ile Met Pro Ile
            1515                                1520

tgg ctt cca cca tca cca cca gat tcg gat gcg gat ttc gac ttg aga 18965
Trp Leu Pro Pro Ser Pro Pro Asp Ser Asp Ala Asp Phe Asp Leu Arg
1525                                1530                                1535                                1540

atg gaa gat gat tgt ctg gat ctg atg tat gaa att gaa caa atg aac 19013
Met Glu Asp Asp Cys Leu Asp Leu Met Tyr Glu Ile Glu Gln Met Asn
            1545                                1550                                1555

gag gct cgc cta cca caa gtt tgt cat gaa atg aga cgt ccg ttg gct 19061
Glu Ala Arg Leu Pro Gln Val Cys His Glu Met Arg Arg Pro Leu Ala
            1560                                1565                                1570

gaa aaa cag cag aaa cag aac acg ttg aat gcg ttt aa tgtaatat 19109
Glu Lys Gln Gln Lys Gln Asn Thr Leu Asn Ala Phe Lys
            1575                                1580                                1585

ttcaaaaaaa aatttttttg aaaaaattca attaaattcg attttgagca atttttatcg 19169
tgaagattgc ataattttga gattttgcgc caagattttt gttaaattga aaaaaagaga 19229
tgtgcgcctt tatggagtac ttagtatttg aaaattgaaa ttacagtact ctgtttaaaag 19289
gcgcacacat gtattacgta gcgaaaagaa aagtacagta attagttaaa taagactact 19349
gtagcgcttg tgtcgattta cgggctctga attttatatg aatttttgaa aactagaaac 19409
atctcaaatt gcataaaatt accatttgaa cctcccgcga agtgattttg ttcgacgggg 19469
cgcgcttgca cgttttctat ttttaattta tttcaatttt tttgcttaat tctcaccgat 19529
ttttcatgtt ttcagtttga ttttgatgga aatttgagga caatatcaac ataaatgctt 19589
ttcaatcgaa aatgtgcatt tatattgaca ttttctccga atttccatca aaattaaact 19649
gaaaacacga aaatcgggtg agaattaagc gaaaaaattg agttaaatga aaatagaaaa 19709
cgtgcaagcg cgctccatcg aacaaaatca attggcggga gggttcaaat ggaattgtat 19769

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Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE LET-60 RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 51 of 91

Customer No.: 21559

FIGURE 19

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gcaatttttca aaaggtcgta taaaattttg aagaaagcaa attaaattta aaaaatcgag 19829
ctcgtaaate gacacaggcg ctaatttttca aaaaaataaa atgacaccca aaaaatcata 19889
agaaaatcat aaataaatat tacgggaaca caaaactcag agaaccgta ttgcacaaca 19949
tatttgacgc gcaaaatatg aaatatctcg tagcgaaaag aaaactaccg taatttataa 20009
acattttaat gactactgta gcgcttgtgt cgatttacga gatctcgatt ttctaaataa 20069
atttttttaa aaatgatgtc agcgatatte catttgactt tgtttcttcg tattattttc 20129
tcatttttgc ttgattttat ttaattttat aattttattt aaaatcaagc aaaaacgaga 20189
aaataatacg aagaaacgga gttaaatgga atacgctga cataatttaa aaaaaaatt 20249
taattagaaa atcgagatcc cgtaaatcga cacaagtagt catagtacag tagtcattta 20309
actaattact gtacttttct ttctcgctgc agatatttca tatttttatt catattttta 20369
tttattttca tatttttata tatatatata tatatatatt tcttggcggt ctaatgcagt 20429
ttctctcaat taattcc a gac att cta tcg gca aaa gaa aag gaa tcg gtg 20480
          Asp Ile Leu Ser Ala Lys Glu Lys Glu Ser Val
                        1590                        1595

tac gat gcg gtc aac aag tgc ctt caa atg cca caa tcc gaa gcg atc 20528
Tyr Asp Ala Val Asn Lys Cys Leu Gln Met Pro Gln Ser Glu Ala Ile
          1600                        1605                        1610

aca gca gaa tct gca gcg tct cca gca tac acg gaa cac tca tca ttc 20576
Thr Ala Glu Ser Ala Ala Ser Pro Ala Tyr Thr Glu His Ser Ser Phe
          1615                        1620                        1625

tcg atg gat gat aca agc cag gat gcg aag att gag cca agt ttg act 20624
Ser Met Asp Asp Thr Ser Gln Asp Ala Lys Ile Glu Pro Ser Leu Thr
          1630                        1635                        1640

gaa aat caa caa ccc acc acc acc gcc act act act act aca gta ccc 20672
Glu Asn Gln Gln Pro Thr Thr Thr Ala Thr Thr Thr Thr Thr Val Pro
          1645                        1650                        1655                        1660

caa caa caa caa caa cag cag cag caa aaa tcg tcg aaa aag aag aga 20720
Gln Gln Gln Gln Gln Gln Gln Gln Gln Lys Ser Ser Lys Lys Lys Arg
          1665                        1670                        1675

aat gat aat cga a cggtacggag gttactagcg aacaatttca agaaattttg 20773
Asn Asp Asn Arg
          1680

aatttgtgaa aattcaattc cggcaatttt tcgatttgcc ggaactttta attttcgccg 20833
aattgtcaat ttgccgaaa ttttgatttc cgccgaattg tcgatttgcc ggaacttttc 20893
attttcggca aattttcgat ttgccggaac ttttaatttt tgacaaattg tcgatgtgcc 20953
ggaaattttg attttcgaca atttgctgat ttgccggaat tttcaatccc aacaattttc 21013
cgatttgccg gaaattttcaa tcccaacaat tttccgattt gccggaaatt tcaatcccaa 21073
caattttccg atttgccgga aatttcaatc ccaacaattt tccgatttgc cggaaatttc 21133
aatcccagca attttccgat ttgccgaaa tttcaatttc ggcaattttt cgatttgccg 21193
gaacttttca ttttcggcaa agtgcgatt tgccggaact tttcattttc gccgaattgt 21253
cgatttgccc gaacttttaa tttttgacaa attgtcgatt tgctggaaat tttgattttc 21313
gacaatttgc caatttgccg gaacttttaa tttttgacaa attgtcgatt tgccggaaat 21373
tttgattttc gacaatttgc caatttgccg gaacttttca tttttgcaa attgtcgatt 21433
tgccggaaat ttttaattccg gcaattttgc gatttgccgg aaatttcaat tccggcaatt 21493
taaaaacact aaaaacaaa aattttcggt tttcccggtt ttcgatgtt cagcttttct 21553
caaaaattg cgattccccg aaaaatcgaa acaatttttc ggggttaaac cgggaaattc 21613
ctaaattcct atttaaaaga attgaaaaaa aactctcaaa attcc ag gct caa aat 21669
                                Lys Ala Gln Asn

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FIGURE 19

cga aca gct gaa aat ggt gtg aaa cga gcg aca act cca cca cca tca 21717  
 Arg Thr Ala Glu Asn Gly Val Lys Arg Ala Thr Thr Pro Pro Pro Ser  
 1685 1690 1695 1700

tgg cgt gaa gag cca gat tat gat gga gcc gaa tgg aat ata gtt gaa 21765  
 Trp Arg Glu Glu Pro Asp Tyr Asp Gly Ala Glu Trp Asn Ile Val Glu  
 1705 1710 1715

gat tat gca cta ctt caa gca gtt caa gtc gaa ttt gca aat gct cat 21813  
 Asp Tyr Ala Leu Leu Gln Ala Val Gln Val Glu Phe Ala Asn Ala His  
 1720 1725 1730

tta gtc gaa aaa tcg gcg aat gag gga atg gtg ttg aac tgg gaa ttc 21861  
 Leu Val Glu Lys Ser Ala Asn Glu Gly Met Val Leu Asn Trp Glu Phe  
 1735 1740 1745

gtg tcg aat gcc gtt aat aag cag aca aga ttt ttc cgc tcg gcc cgt 21909  
 Val Ser Asn Ala Val Asn Lys Gln Thr Arg Phe Phe Arg Ser Ala Arg  
 1750 1755 1760

caa tgc tca att cga tat caa atg ttt gtt cgg cca aaa gag ctc gga 21957  
 Gln Cys Ser Ile Arg Tyr Gln Met Phe Val Arg Pro Lys Glu Leu Gly  
 1765 1770 1775 1780

cag ttg gtg gct tct gat ccg att tcc aag aaa acg atg aaa gtc gac 22005  
 Gln Leu Val Ala Ser Asp Pro Ile Ser Lys Lys Thr Met Lys Val Asp  
 1785 1790 1795

cta tcg cat act gaa tta tct cat ttg aga aaa gga cga atg act acg 22053  
 Leu Ser His Thr Glu Leu Ser His Leu Arg Lys Gly Arg Met Thr Thr  
 1800 1805 1810

gag agc caa tat gct cat gat tat gga ata ttg act gat aag aaa cat 22101  
 Glu Ser Gln Tyr Ala His Asp Tyr Gly Ile Leu Thr Asp Lys Lys His  
 1815 1820 1825

gtg aat aga ttt aaa agt gtt cga gtg gcg gca aca cgg aga cct gtt 22149  
 Val Asn Arg Phe Lys Ser Val Arg Val Ala Ala Thr Arg Arg Pro Val  
 1830 1835 1840

cag ttt tgg aga ggc cct aaa ggt aga gga gga tgg ctt cat aat agt 22197  
 Gln Phe Trp Arg Gly Pro Lys Gly Arg Gly Gly Trp Leu His Asn Ser  
 1845 1850 1855 1860

cac tgc aac ttt ttc ctc acg agg gac gag aaa aag tgg ttt cta ggc 22245  
 His Cys Asn Phe Phe Leu Thr Arg Asp Glu Lys Lys Trp Phe Leu Gly  
 1865 1870 1875

cat ggc cga ggt gcc gac aag ttt ca gcggccattt atcttgcttt 22291  
 His Gly Arg Gly Ala Asp Lys Phe  
 1880

gttttccgcc cgttttcttt cgtttttcac cgattttttt cgttttttct taataaaact 22351  
 gataaataaaa tattttttgc agatgctaaa aaaattttcca agtaaaaaaa tcatgtattc 22411  
 agtgggcatg cagcggtgaa agtgggcatt gtaatatgat ggattacggg tatacaaaac 22471  
 ctaaaactttt tctgaaacat gatacatgtg ctgcttaaat gctgagacta cctgattttc 22531  
 ataacgagac cgctgaaaaa gttttgaggt ttccaaaatt caactttttt aatqaaaaag 22591

Title: RB PATHWAY AND CHROMATIN REMODELING  
 GENES THAT ANTAGONIZE LET-60 RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 53 of 91

Customer No.: 21559

FIGURE 19

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tcgagatttt cgcacaaaaa gttgaatttt gaaaacctca aaactttttc agcggctctcg 22651
ttatgaaaaa caggtaattt cagcatctaa gcatcatatg tatcatgttt cagaaaaagt 22711
taggttttgt attcccgtaa tccatctatt tacattgacc actttcaccg ctgcttgccc 22771
actgaatata taattttttc acttggaat tggttttagca tctggaaaaa gtatttattt 22831
atcagtttta ataagaaaaa acgggaaaaa gctgtgaaaa acaaaaagaaa acaggcgga 22891
aacaagcaa gataaatggc cgtgaaact tgtcggcccc tcggccatgg cctagaaacc 22951
acttttcttc gtccctcgtg aggaaaaagt tgcagtgata gtctaaaatt cggaggaatt 23011
ttttaaattt ggaaaaaatt gttaaatttt tttttctgg aaattggaaa atcacaattt 23071
ttcgattttt gtttgtaaaa aaaaaaaga aaattggcat aataaaacat ttcttttttt 23131
tttgaaaaatt gggaacttct taatatcaga ttttttaagt aagatttttt tgattttccg 23191
gaaattcgga aaacctgaaa attttcaaca tttcaaaata aaaatttccg tttttttttt 23251
ctgaaaatct ccaacaaaaa aaggtcaaat cgtcagaatt attgttgga gtggcggttt 23311
ttcacgatta gatttcagta ttttttcttc tgaatttcaa atttgaaaaa aaatcgaata 23371
aaactgtagaa aaatgataga aaattaacaa aaattctgat taaaggtaaa gggaaaatag 23431
accgtaatga ccgaatataa ctgttgaaaa tatcaacaaa aaaaattctg aattttttgt 23491
gactttttca atttttcaag aataaaaaaa acgaccgaat aaaatatttg aattcccgcg 23551
caaagtgtg actggttctg gccaatttac agtcttttta taaaagaaaa aatctagaaa 23611
aaccggcgaa ttagccaga aaacgcaaaa aattaaaaat gacgtcactc atttgccgcg 23671
ggaatacaaa ttaattagg cgttttctt gatttttgaa aaattgaaaa aaccattaaa 23731
aaatttagaa atttttttga attttttaca gttttttatt cggtcattat ggggttatt 23791
aagtagtgtc ggaaaattaa aaagtgtaga aaaattacgt cacaactctg tattcaagta 23851
tataaaaaa tgattttaaa tacattttgc tacattactt gaataacccc attagggttt 23911
attttcttta gagcaaaaaa aaacatgttt ggctctactc caccttttaa tgaaaaaatc 23971
gacaatttgt gattttgcaa tttccagaaa aaaaagaaaa aagttgcttt ttggaaaaaa 24031
ccaaaaaag ccatttgaaa aattttattt tccaaaaaaa attattttgc agctctagaa 24091
tctcgaaatc tgcaatctct aaacggcgga atgccaccac gacacgagtc gagactcgcc 24151
gaattcgacg taaaaaccaa tattcgctg gacgccgagg acattgtcac aatgtccgac 24211
gagtcgattg tcgcctatga agcagcaag aagaagctac tggccagtcg tcaaacaaaa 24271
ccctcaccac gtcaagatgt ccgattccat acgctgggtc ttcggccgta taccgtacct 24331
gtgacaactg agtactcggc tgcaccttct cgtcgtgaaa tgcgcatcgc tggtccaccg 24391
cttcagcctt cggctttatc tacgatttcc tcagttgctg ctgctgccac gtctgggcca 24451
ctaccatcaa ttcagcattt gcagtctgct tctacgggct tgggattctc gcaaaatttg 24511
caaaattcgc ataattctga gcaaaagaaat aatgtgcaaa atatgcatca aaatcaatat 24571
aattcaagtc aaaatccgcc aatacctatc cgacaaatcg gagcagcatc atcacaccaa 24631
catgatcaag gatctcaggg gcctggggga aaaccacaag cctatcacct ggtgcaacag 24691
ggatcacagc aacagcagca gcagcagcag caggcgacgt tacagcgaag aaatgcggcg 24751
gcggcgcgag ggtcgaatgt gcagtttatt cagcagcagc agcagcagca gcaatcgggt 24811
aaaaattgta tggatttata ggaaattata tgaatttgcg cggggatagc cccggcgaaa 24871
aacgggaaaa agcgacaatt taaaaaaaaa tcgtgtgaaa atctcaattt tttaacaattt 24931
tgaaagtaat tttttattga aaaaagtgga atttaggcatt tcatccagag cagggtctggg 24991
acaaaaaaa atttttggac caaaaaccaa aaacaaaaaa attgaaattt ccgaaaaaatc 25051
aacttaagca tcaaaaattt tttgtttttt tttttgtttt ttggtttttt ttggtatttt 25111
gacgaaaaaa cgattttttg gttttttggt ttttcgagac caaaaaaacc aaaaaatcca 25171
aaaaaatgtt tgccgtgtct agtctcgacc tagacacggc aaacattttt tttttttgga 25231
ttttttggtt tttttggtcc cgaaaaacca aaaaaaccaa aaaatcgatt tttcgtcaaa 25291
atacaaaaaa aaaacaaaga attcccagcc cctttcgcca aaattgccgg atattttcaa 25351
acctcaaaaa aaatttataa aggtggacta catcctgtgg ggaaattgct ttaaaacatg 25411
cctatgggct cacaatgacc gaatatcatg attaaaaaat tcaacaaaaa aattactaga 25471
ttttatgtga ttttttgaaa attaaaaaaa tctcagtttt caacctaat cctatttgaa 25531
tttcgcgcaa tttgatttgt tcgatggagc gcgcttgctt tatttttttt tattcattga 25591
ttttattttt attagcatta tttcactgat tttcttcatt tttgtgtgt ttttgggtgg 25651
aattgaaatg aaaaaaaaca agataaatgc agaaagtctg ttaaaagggtc attgaaaatg 25711
cttaaacgg caacaagctt gaaatttgta tattttacac agttttacgc attttcaatg 25771
actttttaac aaactttccg catttatctt gtttttttca gttcaatttc cattaaaaaa 25831
cacacaaaaa aaaatgaaga aaatcagtg aataagggtt ataaataaaa taaatgaata 25891
aaaatgatgc aagcgcgctc caacgaacga attcaattgg cggaaattca aatatggaat 25951
taggtgaaaa ctgagatttt tttttcaatt ttcaaaaaat catataaaat ctagaaccat 26011

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Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE LET-60 RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 54 of 91

Customer No.: 21559

FIGURE 19

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tttttgaatt ttttaatcat gatattcggg cattgtgacc ccataggcgt gttttaaagc 26071
aatttcccca caggggtgtag tccacctttg acgaggtttg aaaatgtccg gcaatttttg 26131
cgaaattgcc ggaaacttga gattttttcag tgaaaaattc caaattttcat gtggaaaaact 26191
gtttttttgt tttttgaaa atgcaacaaa aaaaactatt tggcgcgaaa acgcggatag 26251
ttttgccaat tttcaaggat tttccgctat ttttaatgtt tttatgccga attttacttt 26311
aaaaaatcat aattattcgg aaaatgctcg aagagcattt ccaattgtct gtggagcgcg 26371
tttgactaat cagataatat tccaggcggg caaggacaaa gcttcgttgt catgggctcg 26431
cagagctcat caaatgatgg acaagggtga gcacgcacg tcggaggagg aggaggagga 26491
tcacaacagc ctcaccagca gcagcagcag agccacaac aaagaatata gtacattcca 26551
caagttaccg gtagcggaaa taacgggtga ggtggtgga gaggaggcta cggtagtaca 26611
ctggtcatgc caaggaggag acgtgttgtc aggttggta gaaatacaaa atcgcgaaaa 26671
aacggcattt cgggcttccc gaccaatcag cgatttgctc cgccacttt cggaccaatc 26731
cgctgaccga ggcatttgat tggtttgaaa ttggcggag cagcgaattg ctgatgcgaa 26791
atacgggaag ttctcatttt gatggaaatt ctgcaaaatt ctttaaaaaa aacaaaatct 26851
tctcaaattc ggaaaaaatc acaaaggaaa tcgaagaaaa tcgcgatttt tgattccccg 26911
accaatcagc gatttgctcc gccactttt gaaccaatca gcgttcgagg catttgattg 26971
gttcaaaaact gggcggagca gcgagttgct gattggattt ttcagttttt aaatttttaa 27031
agcttttttt aacggaaaaa ttcgagaaaa ccatagattt tgatgagaaa tgatgaaaaa 27091
tttcatgaaa aaatggaaaa atgattggaa attaatcaaa aaatcttgaa aaaaattttt 27151
ttttcagaga aaatgcttca tttttggctc tgaaacgcct cttttttatt tgtgcctccc 27211
cgaccaatca gcaatttgct ccgcccactt ttgaaccaat cagcgaccga gcgatccgat 27271
tggtttgaaa ttggcgggag ctaaaatgat tttaaaaaaa ttcccgattt gtttaatcta 27331
gaaattttaga aaaaagaaat atagaaaaaa aatagaaaaa aattaaaaaa aaaaaaaca 27391
aaaatcggaa aacgtcggaa aatattacga aaaaaatttt ttttaattgat tttttttcga 27451
aaaaaactaa aatttttaacc aaaaattcaa agaaaaaatt tgtttttgat tttttttcgc 27511
aaaaaaaaaa aaatttttaac caaaaattca aaaaaaaaat gtttttcttg atttttttcc 27571
aaaaaaacta aaattttgac caaaaattca gcaaaaaaaa aattttttta ttgatttttt 27631
tttcgaaaaa aaataaaaatt ttaacaaaaa attcaaaaaa aaaatttttt attgactttt 27691
ttcgaaaaaa actcaaaatt taaccaaaaa ttcaaaaaaa aaaatttttt ttttgatttt 27751
ttccgaaaaa aactaaaatt taaccaaaaa attcaaaaaa aaaatgtttt tcttgatttt 27811
tttccaaaaa aactaaaatt ttgacaaaaa attcagcaaa aaaaaaattt ttttaattgat 27871
ttttttttcg aaaaaaata aaattttaac caaaaattca aaaaaaaaat tttttattga 27931
cttttttcga aaaaaactca aattttaacc aaaaattcaa aaaaaaaaat ttttttttg 27991
attttttccg aaaaaacta aaattttaac caaaaattca aaaaaaaaat ttttattgat 28051
ttttttccaa aaaaactaaa attttgacca aaaattcagc aaaaaaaaaa ttttttaatt 28111
gatttttttt cgaaaaaac taaaattttg accaaaaatt caacaaaaaa aaaatttttt 28171
attgattttt ttcgaaaaaa actaaaattt tgaccaaaaa ttcaacaaaa aaaaattttt 28231
ccagccagcg ggaactctac caggcgggtg acgtctgtat gtcgatcata accgtcatcc 28291
atatccaatg tcgtcaaatg ttgtgccagt acgtgttcta cagccacgc aacaaggaca 28351
acaacgaatg atgacaggac aacgtcgtcc ggctccagcg cccggtactg tcgccgcaat 28411
ggtgttgccg aatcgaggag ctggtggaat tccgcaaatg cgcagtttgc agtgagtttt 28471
gcacggaaat tggacgattt tcagcgaaat tttcgggaaa aatggctatt ttgtgtttga 28531
aattgcgaaa tttcacgatt tcgtcttaaa tacggtgcca acctaccca tgacggtttg 28591
atctacaaaa aacgcgggaa tttttcacac aaaaatatgt gagacgtctg cacgttctta 28651
accaatcggg tgaaaaactc gccgcatttt tgtagatcta cggtagatca ctgcagattt 28711
taagagagaa aaataaataa ataatccac aaggttttta aaattttttt ttcaatcgta 28771
aaaaatagcg aaaaattggt tttcgcgtcg agaccctacg cacatttttt tgcaattttc 28831
gcttcaaaat tacggatccg ggtctcgaca cgacattttt attgtgtaaa atacacaatt 28891
ttttggaatt ttcacgatt cgaattttaa tatttttaa tgatttaatt aattcttaac 28951
gaaaaaaaaa agtttcgaaa ctgcagtact ctttaaggc gcacacatgt atgtatttat 29011
aaaaaatgtc gtgtcaagac cgtacttttg gctcacaat tgcaaaatat tgcggaattt 29071
tttttaattt tagataaaaa aaacatgaa aaatctatgg aaactaaact tataatttaa 29131
aaaaaaattt ttttaagggt gactacgtc agtggggaaa ttgcttttaa acacgcctat 29191
gaggcccaa tgactgaata tcatgattaa aacaatcaaa aaaaattttc tagattttat 29251
atgatttttt gaaaattgga aaaatcacag tttcaccta attctttttg aatttcgcgc 29311
aattggatta gttcgggtga gcgcgcttac attattttta attatttatt ttattttatc 29371
tcgttatttg actgattttc ttcatttttt gtgtgttttc ctcggaaaaa ggaagaaata 29431

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Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE LET-60 RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 55 of 91

Customer No.: 21559



FIGURE 19

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aacaagacaa atgcaaaatg tttgttaaaa agtaattgaa aatgcgtaaa actttgatat 29491
tctgagttcc gacgacaaca agcctgaaat tagtatatct cacagttttt ctcatcttca 29551
attacttttt aacaaacatt ttgcatttgt cttgtgtatt tcttccattt tccgaggaaa 29611
aaacatagaa aatgaagaaa atcgggtcaaa taacgagaat aaataaaatt aatttttaaaa 29671
aagatgcaaag tgcgctccac cgaacaaatc caattggcgg aaattcaaat atggaattag 29731
gggaaaaactg tgatttttcc ctttttcaaa aaatcatata aaatttgga aatttttttg 29791
aattttttta atcatgatata tgggtcattg gcgccccata ggcgtgtttt aaagcaattt 29851
ccccactgag cgtagtccac atttaatttt ccaaaacagc acatgctaata cctccaagtt 29911
attccagacg aggcagttac accggcgggt gtggtcagca acgaatcaac gtgatggttc 29971
aaccacaaca atgcgcgagc aacaatggcg gtggagtcgg tggcctaagga ggcctccagg 30031
gtggtccagg aggtccgcaa ggaattcgtc ggccactcgt cggacggcca ctacaacgag 30091
gagtcgataa tcaggcgccg acggttgctc aggtcgttgt tgctccgccc caaggaatgc 30151
agcaggcatc acaaggacca cccgtacttc atatgcagag agcggtttcc atgcaaatgc 30211
cgacgagtca tcatcatcaa ggccaacagc aggtcctccc gcagagctca cagcaggctt 30271
cgcaacaggc tcccacatcg gattctggga cgagtgtccc gccacgacaa gcaccaccac 30331
cacaaaaacta gaattttccc ctattatcct attttacccc ccaaaaactct attaatataa 30391
taatttcctt cctatttttt tcttcgtgtg aagattattt gtcccccaac caagggtgtc 30451
ggtttttcga tttttcgacg tttttcaaaa aaatttcgat ttttcgaaaa attagcttca 30511
tattttggct attactctgc tttttagaag aaatttgtat gtttttctt gaaaaataa 30571
gcaaaattag atttaaaaaa aatcatattt tatggttaat tttctgaaca ttttttcaa 30631
ttttcgattt tcacagaaaa acatcgaaga atcgacaaaa tcgaaaaata tgttccgaaa 30691
attaaaccata aaatatgatt ttttttaaaa tctaattgtg attatattta taagaaaaaa 30751
catacaaaat tcttctaaaa agcagagtaa tagccaaaat atgaagctaa tttttgaaaa 30811
aacgaaaaat tttcgatttt ccaaagaatc gaaaaatcga aaaatgacac ccttgcccc 30871
aactatctct gtatattatt catctattat tgattgtttc tttttgttcc tcgaaatttt 30931
ttgaaattaa agttctcttc cccaccccga tttccgttgc tttattaatc gcgattgatt 30991
aattgttttt ccataaatcc ccaactattt atctctgtat attattcatt tatattattt 31051
atcttttate tgtgtcgatt tacggatatc ccgggccgta tgattttgaa ttctcttctc 31111
aaataaaatt gtttttcatt taacatttga tacgtgtttt tctgattttt ttgtatata 31171
attttccatg tatatatatt tttttctttt ttctttgctc caactttatt ttaataatg 31231
cttttttate aagagatttt ttaaaaaatc gatttttttt aaagccagga attctgaaga 31291
atcgaaaaaa atggaactat ttttcaaaaa atgagaaaat ttttttttt caagaaaaaa 31351
ataataaaat tctgattttt ttaataaaaa tttaataagt ttttgaagat ttctattgaa 31411
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tatagttttg tagttaaaaa aatgtttcac ataaaaatct aaaaaatttt gattttaaat 31831
taaaaaaaaa tcgaattttt taaaattttt ttcaaatcgt aaaaaagaa acaataaaca 31891
aaagaattcc ggaaaaaaat tatattatga ttataaattt atagttcttt acttttttaa 31951
aagattttat tttaaaaatt ctaaaatgat cgatttttgg ttttttaaaa taatcaaaaa 32011
tgtttgattt tttttaaacg tgaaaaaaat gcaaaagaaa tgaaatccgg caaaaattgt 32071
aatataatta taaatctata cttttgtggg tttttccaat atttctataa attcttgatt 32131
tttaaaaata tcaaaagttt tgatttttaa ttttgaaaa attgaatttt tgtatatttt 32191
tctaactgta aaaaaatttt taaaaaaatc gaaagcggat ttttttctgc tattttgttt 32251
tttttttgaa aaccggaaaa aataccaaaa attgatagtt tcgaccactc tggctagact 32311
accaaaattg aatttttttt ttccaattga gaatggccgt ggtctcatca gtactagcc 32371
attctctttt tatttcaatt ttttaagaaaa aagtccttaa aattttgaaa aaatcgattt 32431
tttttactta ctttgatact ttttttatat cttttcaaat cttaaaaaac aattttaaaa 32491
attgaattcc ggaaattttt ttaataataa taaatctata gttttttagt ttttaaaaaa 32551
tatattttta taaaaatcta aaaagttcgg cttttgactt ttgaaataat cgaaaatgtt 32611
tgttttaaat ttgaaaaaaa tataaaaaat tcgatttttt caagataaaa aagcgaattt 32671
tttgaaattt ttccaatcg taaaaaatgt ctgtagtttt tttaaagact ctcataaaaa 32731
tctgaaatgt tcgatttttt atttttaaaa taatttttaa aaaattttta tattttttat 32791
cgtgcgaatt ttttaccaac tataatttgg aataattttc aqatctcaa aatatccac 32851

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FIGURE 19

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aatcgcgcaa atatgccagg aagcaatgaa gattggataa agaaggaggt cgaggaccag 32911
gacaccaacg ccaacagctc gagctccagc atagccgtct cgcgtcagct cgaagggaat 32971
tctgctgttc ctgacgccat cgaccttctg tcttctcaaa tcaaaagaga agttgaagag 33031
gaggatgata gcaacgatga gactggaccc cgcttcggagc ccgtggatgt taagccgtct 33091
ccaaaacgcc caacgaagag gtcagccgag acctggacga cggctcggcg ccaagcaaga 33151
aacggtctac ggcgggagac ggttcaactc atcgattcgc gtatgtgaat gttggagtc 33211
gccatccata cgatccacgc catcttgta tggaaacttc attgaatgaa attaggttaag 33271
gaattattga aaataattat tatatatcca ttttaattca atttttttt tcagaatcga 33331
agatttcgaa ataatccagt atcttccgat gcccttcagg acttcgatcc ccatgaagct 33391
agtgatcttc gcagtgaaga gtgaagaatc tgccgagaag atccgctcgt taatcgatcc 33451
ttcgatgttg atcgcggtt ttggtggcgg aaccgaaact caaaaattct tgtggagcga 33511
gctgacgggtg gaggatttcg tcaaggcaca cataatggcc agcaggtaag ctttcgaaca 33571
tacttaattt tttaaaaact aaaattcagc gcaaccgatg acgtgccata tgaggcagcc 33631
atggcggatc gagaatcgct caaacaagct gtaaatgatg ccagctctct gaaaggcttg 33691
aaggaggtaa taatttagaa atgacagaaa atgaaccgtg atgacgaaat acatctgtaa 33751
aaaaattata aaaaattcta agctccgttt ttaattttt ttttcagtta tattctgtca 33811
tagcggccta tttctctgga aaaaaaaatc caaaatagcc tcaaattcgg aattatgctt 33871
cgattttttt tctgcggtag tcttgaattt aagacgattt tgaattttt tagctgctt 33931
tcgcccacat tctgttaaac atttcagagc atgtcgaaaag ctggatggag gatcgtgagt 33991
aagatgcgga aagatctcaa tggagcctga tgatccctt cccagcacac aagacagttt 34051
taattttgtg tctgtatagt tttatattaa gttttgatga taatgaattt ttttacggtt 34111
ttatccatca cttggctcga ttgaagctcc tattgtgcag cacacacggc gtgtaaatta 34171
gtgcatctaa cctaggaaat gcgatttcta ggccatggcc gaggatccga ctgatcttt 34231
tttgatgggtg tttgtacaga gttaaatttc attttgagg gaaattgaag gaaattgaaa 34291
gagaaattaa ttaataata ttaatttgat ttaaatgacc agaacaaaac aaataaactg 34351
aatgacaagc caatcgatat tcgtccagac tgggatgatg ttatatgaac tctttcacct 34411
gaaacattta agttttttta ataaaagagc aagcgcgctc aaacgcgaaa acgctcgatc 34471
cacttaatct ggattttgtg ccgattcatt tatttcaagc tatgctcgtt ttttctgtt 34531
atgtttcatt aaaaagaccg aaaaacataac aaaaagtgcc tgaaaacgaa aaaaaaccgg 34591
cgacattaat tgaaaaattc aaactacaa tttcgcgcc aaaacccaac gagacccaaa 34651
gtttcagcgc ggagcgtttc cacttgccg tggagcgcgc ttgtatataa aaggacttaa 34711
ttttttaaaa tacttaccgc agttacttcc aatgtatgac aaattcactc gattctccat 34771
tgacgggtta ctaaaatatg ctccaaatag ttggcaaggc gttgacttga ataaatcggg 34831
atggttatct tggatgattg cagttcgatt tccttttgta attatgttct aaaaagtcatt 34891
tgtaatcatt taaaagtggg gtagcgccag tggggatttt gtctaaatgc acttattatg 34951
atccaaaaca accgaatata atcataaaac actccaaaaa gtttagtttt ttcataattt 35011
cctgtcaaag ttttgcaaaa ttggcaaaat tttgaaaaat gcgagctttt gaggttaattt 35071
aaggaaatgt cgcagtgttc gacccctaca attatttaat acagataatt taaacaaaat 35131
taaaacataa aaatgtagaa atttttttt ttttggtcga tttccaaaat tatgagtggc 35191
aaaaactgag taattgccac tttttgacag taaataaaaa atgttcaaaa ttttttgaaa 35251
cgttttatca tgatatttgg ccattatggg agcaaatgag tggtttatct attttttcac 35311
tggcgctact ccacctttaa gcatgtctgc ctaccataa tccatttaa tccaacgttt 35371
cttagatttg gattcgaata tatttgaatg actggaaaat atgttacgtt accattcaat 35431
gcaccaatat aagtcatttg atcgagaaaa ttcaaatcgg tgagatttgt gtttctgata 35491
gtcaatgttc cgaataaaaa ttgtaacact cctaatttgg aaacataatt ttcattctca 35551
tggctatta atagatctcc aaggatatac atacatgtat ctgatagttt gctcattgat 35611
tcaaatgtgc aataaaatga cgcattcaat ggaccaggat ctttgcaaag tttgccttca 35671
atgttttcag tagaaattcc aaggttcaat agggcaacta tctcagtaat ggtgcacaaa 35731
aaatcaggat gaagggtttc aaaattgaag tattgccttt tattgtatgt actgtattgt 35791
atcatactgg tttgctcaac tgtatctata actttctgaa attttatgtc attattttca 35851
gaaatcgac taggcaggca agcctgcctt accgtcagaa ttggcagtc cagtcgaatc 35911
atttcggat tatctgtac attcaatgct acactagcta tatccgagtt atattcgata 35971
gtttcgaggt tttgtaaaaa cgacaaactc tgtagattag tgttccgaat tgcaatagat 36031
cctcgaatca ttgtgacatt caaaaatgaa tcataatcga aggttgcaat aatattcact 36091
aaatttagac cagaatctag agttttgcat ttggagtact ccttaacatt tgatacatta 36151
actttttcac catcacatcc tgaaatttga ctatttttat actgttaaaa aattgtttct 36211
caccacaatc ctttaagttc cctctgacaa tgagctcatt atacatgtgt aaaaqccgc 36271

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Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE LET-60 RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 57 of 91

Customer No.: 21559

FIGURE 19

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catcacagga aaattccagt ttcggattat tctcgattct aatcacacac gcctcgatac 36331
cccgatcacg gtacaagtag agatcgtaga gcacactggg gtcgtttaat tgtgaattgt 36391
ttcggatgta aacaccgtct gaaatctgaa gtttaagaaa aaattaagta agttttaatc 36451
tacatggtga tccgtttttg ttgaaagtat caaaaaatta actggagtca gaatgtctca 36511
tttcgttttg atcttcaaaa aatgcgggag ttcagacctt gacatctcgt ctgatttcgc 36571
atggttaaga gcgttctgac gtcacaattt ttctgaaaaa atattcccgc attttttgta 36631
gatcaaatga aaatgagaca gcctgacacc acgtggagtt ccttatatac aaaaaagttg 36691
atttttcgct cgtgattttt cgttgtaaca tcatgaaaaa tccagtgttc tctgcaaacc 36751
actaaaatcc acttttttgt ttcagccgct ccgcaagcag cttcgtcgag gtcatggcag 36811
cggccgagtt tcccactccg ctgaaactcg gcacttaata tatgaacgac taagctagca 36871
gggccgccat tctaccttac cagcaaaaat gaattcgttc acttacacac atcacacacc 36931
acattaaagt ttcctttttc tttgtcagct gtaaaaaccg aaaggcttgt cagactagta 36991
ttctcaatat taaatc 37007

```

FIGURE 20A

ssl-1 Predicted exons:

Exon	Position in genomic sequence (inclusive)
1	1001-1281
2	1923-2027
3	2084-2312
4	4420-5205
5	5855-6487
6	7685-8515
7	9700-10184
8	12211-13165
9	13643-13726
10	13796-13939
11	18879-19101
12	20449-20735
13	21661-22273

Title: RB PATHWAY AND CHROMATIN REMODELING  
 GENES THAT ANTAGONIZE LET-60 RAS SIGNALING  
 Applicant(s): Horvitz *et al.*  
 Filing Date: September 12, 2003 Serial No.: N/A  
 Page 59 of 91 Customer No.: 21559

Figure 20B

ssl-1 cDNA

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atgccggcaa caccggtgcg tgcttcaagt actcgaataa gcagacgtac atcatcaaga 60
tcagtggctg atgatcagcc atcaacttcg tctgcggtgg ctccacctcc ttcacccatt 120
gccatagaaa ctgatgaaga tgcggtagtt gaggaggaga aaaagaagaa aaagacatca 180
gatgatttgg aaattatcac tccaagaact ccagtcgata ggcaattccc ctacatttgc 240
tcgattcttt tgactgaaaa tcgatcgatt cgcgataaat tggttctgag cagcgggtcca 300
gttcgtcaag aagatcacga agaacagatt gctcgagctc aacggataca gccagttgtc 360
gatcaaattc aacgagtcga gcaaatcata ctcaatggtt cagtgggaaga tattctgaaa 420
gatectcgat tcgcagtaat ggcagatctc acaaaagaac caccaccaac acctgcacct 480
ctctctccaa tccagaagac aatgcaaccg attgaggtga aaattgagga ttcagagggc 540
tcaaatacgg ctcaaccgag tgttctgccc agttgtggag gaggagagac gaatgtggaa 600
agagccgcca aaagagaagc gcatgtattg gctcgaatcg ccgagctccg taagaacggc 660
ttatgggtcga acagtcgtct gccaaagtgc gtcgaacctg aacgtaataa aacgcattgg 720
gattatctac tggaagaggt caaatggatg gcagttgatt tccgaaccga gacgaatacg 780
aagcgaaaaa tcgccaaaagt tatagctcac gccattgcga aacagcaccg cgacaagcag 840
atcgagattg agagagccgc cgaacgggag atcaaggaga agcgaaaaat gtgtgcagga 900
atcgcgaaaga tggtagcgga tttctggctg gctcaggaag tctacggata aagttgtgga tattcgagcg 960
aaggaaagttc tggagtcgag gctcaggaag gcgagaaata agcatttgat gtttgtaatt 1020
ggacaagtgc atgaaatgag caatattgtg caagaaggac ttgtttcatc gtcgaaatcc 1080
ccatcaattg catcggatcg agatgataaa gatgaagaat tcaaagcacc tggctctgat 1140
tcagaatctg acgatgagca gacaattgca aacgcggaaa agtcacagaa aaaggaagat 1200
gttcgacagg aagttgatgc tcttcaaaac gaggcaactg tggatatgga tgactttttg 1260
tacactttac cgccggaata tctgaaggct tatggctctga cgcaggagga tttggaggag 1320
atgaagcgcg agaaattgga ggagcagaag gctcggaaag aagcttgtgg tgataatgag 1380
gagaaaaatg agattgatga aagcccatca tcagatgctc aaaagccttc cacctcaagc 1440
tcagatctca ccgccgagca gtttcaagat ccaacagctg aagacggcaa cgggtgatggt 1500
catggtgtac ttgaaaacgt ggattacgtg aaagctcaaca gtcaggatag tgatgaacga 1560
caacaagagt tggcgaatat cgcagaagaa gcgctgaaat tccagccaaa aggatataca 1620
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tatcaaatgg ttggattgga ttggatgggt acactttatg agaagaattt gaatggaatt 1740
cttgcgacg agatgggctt gggaaagacg attcaaacga tttccctgct ggctcatatg 1800
gcttgtagtg aatcgatttg gggaccacac ttgattgttg tgccgacgtc tgtcattctg 1860
aattgggaga tggagttcaa gaaatggtgt ccggtctctga agattttgac gtattttggt 1920
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cagtacctaa ttctcgatga agctcaaaat atcaaaaaact ggaagtccca acgttggcag 2100
gctcttctga atgtccgtgc tcgacgtcgc ctttctctga ccggaactcc acttcagaac 2160
tctctaattg aactgtggtc gttgatgcat tttttgatgc caacaatatt ctcaagtcac 2220
gatgatttca aggattggtt ctgcaatccg ttgacaggga tgatggaaag aaatatggaa 2280
ttcaatgctc cactaatcgg acgacttcac aaagtgtccc gtcctgttat tctgcggcgg 2340
ctcaagaagg aagttgagaa gcagctgccg gagaagactg agcatattgt gaattgttcg 2400
ttgtcaaaagc ggcagagata cctgtacgat gactttatga gtcgtagatc aacaaaggag 2460
aatctaaagt ctggaaatat gatgtcggtg ctcaacattg tgatgcaact ccgaaaaatgt 2520
tgtaatcatc cgaatctctt cgagccgcgg ccagttgttg ctccgttcgt cgttgagaag 2580
cttcagctcg atgttccggc tcgtctcttt gaaatttccg agcaagatcc ctctcctccc 2640
tcagctagtc aaattccgga aattttcaat ttatccaaaa tcggctatca atcttccgtt 2700
cgatctgcaa aaccactcat cgaagagctt gaagcaatga gcacttatcc ggagccacga 2760
gcaccagaag ttggcgggatt tcggttcaat cggaaggctt ttgttgcaaa gaatccgcat 2820
acggaagagt cggaggacga aggtgttatg agaagtcgtg ttctgcaaaa accaattaat 2880
ggaacagctc aaccacttca aaatggaaat tcaataccac aaaatgctcc aaatcgtcca 2940
caaaacttcat gcattcggtc aaaaaccgtc gtaataacag ttccactgac catctccacc 3000
gatcgaagtg gttttcattt taatatggcc aatgttggaag gaggtgttgt tcggttggtt 3060
gattcagcac gtatgagccc accgctcaaa cgtcagaagc tcaccggaac tgcaacgaat 3120

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Figure 20B

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tggagtgatt atgttccgcg acacgttggt gaaaagatgg aagaatcgag aaaaaaccag 3180
ctggaaaattg ttcgaaggcg atttgagatg attcgtgctc cgattattcc actggaaatg 3240
gttgcgctgg ttcgagagga aattattgca gaatttccac gtttggtgtt ggaagaggac 3300
gagggtgtgc aggagaggct tttggagtat tgcgagtgtt tgggtcaaaag attcggaaatg 3360
tacgtcgaac cagtgtgac cgatgcttgg cagtgtcgtc catcatcgtc tggctctcca 3420
tcatatattc gcaacaattt atcaaatac gagctgaatt ctcttctctt tctcctcaac 3480
acctccacta atttcgatac ccgaatgtcg atctcacgtg ctcttcaatt cccagaactc 3540
cgtctgatcg agtacgattg tggaaagctt cagacgttgg ctgttctgct tcgtcagttg 3600
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ggacagacga ggaatgtctc gatttatcga ttgatttccg agcgaacaat tgaggagaat 3960
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ttcacacccg agttcttcaa acaatctgac agtattcggg atctttttga tggagagaat 4080
gtggaagtga ctgctgtggc agatgttgcg acgacgatga gcgagaaaga aatggagggtt 4140
gcgatggcaa agtgtgaaga tgaagctgat gtgaatgcgg cgaagattgc ggtggccgag 4200
gcgaacgttg ataatgcgga gtttgatgag aaatcattgc cgccgatgag caatttgcaa 4260
ggagatgagg aggtgatga gaagtatatg gatttgatac aacagctcaa accaatcgaa 4320
cgatatgcc aacttttct tgagacacag tacaagccag aatttgagga agaattgcaa 4380
gaggcagagg ctcttatcga ccaaaaaacgc gaagaatggg acaaaaaatct caacgatacc 4440
gccgtcattg acctcgacga ttcggatagt ctgctgctca acgatcctc gacttctgcc 4500
gatttttatc agagctcaag tcttttagac gagataaaat tctacgacga gctggacgat 4560
atcatgccaa tctggcttcc accatcacca ccagattcgg atgcggattt cgacttgaga 4620
atggaagatg attgtctcga tctgatgtat gaaattgaac aaatgaacga ggctcgcccta 4680
ccacaagttt gtcatgaaat gagacgtccg ttggctgaaa aacagcagaa acagaacacg 4740
ttgaatgcgt ttaatgacat tctatcggca aaagaaaagg aatcgggtga cgatgcggtc 4800
aacaagtgcc ttcaaatgcc acaatccgaa gcgatcacag cagaatctgc agcgtctcca 4860
gcatacacgg aacactcatc attctcgatg gatgatacaa gccaggatgc gaagattgag 4920
ccaagtttga ctgaaaatca acaaccacc accaccgcca ctactactac tacagtaccc 4980
caacaacaac aacaacagca gcagcaaaaa tcgtcgaaaa agaagagaaa tgataatcga 5040
acggctcaaa atcgaaacgc tgaaaatggg gtgaaacgag cgacaactcc accaccatca 5100
tggcgtgaag agccagatta tgatggagcc gaatggaata tagttgaaga ttatgcacta 5160
cttcaagcag ttcaagtcga atttgcaaat gctcatttag tcgaaaaatc ggcgaatgag 5220
ggaatgggtg tgaactggga attcgtgtcg aatgccgtta ataagcagac aagatttttc 5280
cgctcggccc gtcaatgtc aattcgatat caaatgtttg ttcggccaaa agagctcgga 5340
cagttgggtg cttctgatcc gatttccaag aaaacgatga aagtcgacct atcgcatact 5400
gaattatctc atttgagaaa aggacgaatg actacggaga gccaatatgc tcatgattat 5460
ggaatattga ctgataagaa acatgtgaat agatttaaaa gtgttcgagt ggcggcaaca 5520
cggagacctg ttcagttttg gagaggccct aaaggtagag gaggatggct tcataatagt 5580
cactgcaact ttttcctcac gagggacgag aaaaagtggg ttctaggcca tggccgagg 5640
gccgacaagt ttcagc 5656

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Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE LET-60 RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 61 of 91

Customer No.: 21559

FIGURE 21

## ssl-1 protein

&lt;400&gt; 3

```

Met Pro Ala Thr Pro Val Arg Ala Ser Ser Thr Arg Ile Ser Arg Arg
 1           5           10           15
Thr Ser Ser Arg Ser Val Ala Asp Asp Gln Pro Ser Thr Ser Ser Ala
          20           25           30
Val Ala Pro Pro Pro Ser Pro Ile Ala Ile Glu Thr Asp Glu Asp Ala
      35           40           45
Val Val Glu Glu Glu Lys Lys Lys Lys Thr Ser Asp Asp Leu Glu
 50           55           60
Ile Ile Thr Pro Arg Thr Pro Val Asp Arg Arg Ile Pro Tyr Ile Cys
65           70           75           80
Ser Ile Leu Leu Thr Glu Asn Arg Ser Ile Arg Asp Lys Leu Val Leu
          85           90           95
Ser Ser Gly Pro Val Arg Gln Glu Asp His Glu Glu Gln Ile Ala Arg
          100          105          110
Ala Gln Arg Ile Gln Pro Val Val Asp Gln Ile Gln Arg Val Glu Gln
          115          120          125
Ile Ile Leu Asn Gly Ser Val Glu Asp Ile Leu Lys Asp Pro Arg Phe
130          135          140
Ala Val Met Ala Asp Leu Thr Lys Glu Pro Pro Thr Pro Ala Pro
145          150          155          160
Pro Pro Pro Ile Gln Lys Thr Met Gln Pro Ile Glu Val Lys Ile Glu
          165          170          175
Asp Ser Glu Gly Ser Asn Thr Ala Gln Pro Ser Val Leu Pro Ser Cys
          180          185          190
Gly Gly Gly Glu Thr Asn Val Glu Arg Ala Ala Lys Arg Glu Ala His
          195          200          205
Val Leu Ala Arg Ile Ala Glu Leu Arg Lys Asn Gly Leu Trp Ser Asn
210          215          220
Ser Arg Leu Pro Lys Cys Val Glu Pro Glu Arg Asn Lys Thr His Trp
225          230          235          240
Asp Tyr Leu Leu Glu Glu Val Lys Trp Met Ala Val Asp Phe Arg Thr
          245          250          255
Glu Thr Asn Thr Lys Arg Lys Ile Ala Lys Val Ile Ala His Ala Ile
          260          265          270
Ala Lys Gln His Arg Asp Lys Gln Ile Glu Ile Glu Arg Ala Ala Glu
          275          280          285
Arg Glu Ile Lys Glu Lys Arg Lys Met Cys Ala Gly Ile Ala Lys Met
290          295          300
Val Arg Asp Phe Trp Ser Ser Thr Asp Lys Val Val Asp Ile Arg Ala
305          310          315          320
Lys Glu Val Leu Glu Ser Arg Leu Arg Lys Ala Arg Asn Lys His Leu
          325          330          335
Met Phe Val Ile Gly Gln Val Asp Glu Met Ser Asn Ile Val Gln Glu
          340          345          350
Gly Leu Val Ser Ser Ser Lys Ser Pro Ser Ile Ala Ser Asp Arg Asp
          355          360          365
Asp Lys Asp Glu Glu Phe Lys Ala Pro Gly Ser Asp Ser Glu Ser Asp
370          375          380
Asp Glu Gln Thr Ile Ala Asn Ala Glu Lys Ser Gln Lys Lys Glu Asp
385          390          395          400
Val Arg Gln Glu Val Asp Ala Leu Gln Asn Glu Ala Thr Val Asp Met
          405          410          415

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Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE *LET-60* RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 62 of 91

Customer No.: 21559

FIGURE 21

Asp	Asp	Phe	Leu	Tyr	Thr	Leu	Pro	Pro	Glu	Tyr	Leu	Lys	Ala	Tyr	Gly
		420						425					430		
Leu	Thr	Gln	Glu	Asp	Leu	Glu	Glu	Met	Lys	Arg	Glu	Lys	Leu	Glu	Glu
		435					440					445			
Gln	Lys	Ala	Arg	Lys	Glu	Ala	Cys	Gly	Asp	Asn	Glu	Glu	Lys	Met	Glu
	450					455				460					
Ile	Asp	Glu	Ser	Pro	Ser	Ser	Asp	Ala	Gln	Lys	Pro	Ser	Thr	Ser	Ser
465					470					475					480
Ser	Asp	Leu	Thr	Ala	Glu	Gln	Leu	Gln	Asp	Pro	Thr	Ala	Glu	Asp	Gly
			485						490					495	
Asn	Gly	Asp	Gly	His	Gly	Val	Leu	Glu	Asn	Val	Asp	Tyr	Val	Lys	Leu
		500						505					510		
Asn	Ser	Gln	Asp	Ser	Asp	Glu	Arg	Gln	Gln	Glu	Leu	Ala	Asn	Ile	Ala
		515					520					525			
Glu	Glu	Ala	Leu	Lys	Phe	Gln	Pro	Lys	Gly	Tyr	Thr	Leu	Glu	Thr	Thr
	530					535					540				
Gln	Val	Lys	Thr	Pro	Val	Pro	Phe	Leu	Ile	Arg	Gly	Gln	Leu	Arg	Glu
545					550					555					560
Tyr	Gln	Met	Val	Gly	Leu	Asp	Trp	Met	Val	Thr	Leu	Tyr	Glu	Lys	Asn
				565					570					575	
Leu	Asn	Gly	Ile	Leu	Ala	Asp	Glu	Met	Gly	Leu	Gly	Lys	Thr	Ile	Gln
		580						585					590		
Thr	Ile	Ser	Leu	Leu	Ala	His	Met	Ala	Cys	Ser	Glu	Ser	Ile	Trp	Gly
		595					600					605			
Pro	His	Leu	Ile	Val	Val	Pro	Thr	Ser	Val	Ile	Leu	Asn	Trp	Glu	Met
	610					615					620				
Glu	Phe	Lys	Lys	Trp	Cys	Pro	Ala	Leu	Lys	Ile	Leu	Thr	Tyr	Phe	Gly
625					630					635					640
Thr	Ala	Lys	Glu	Arg	Ala	Glu	Lys	Arg	Lys	Gly	Trp	Met	Lys	Pro	Asn
				645					650					655	
Cys	Phe	His	Val	Cys	Ile	Thr	Ser	Tyr	Lys	Thr	Val	Thr	Gln	Asp	Ile
		660						665					670		
Arg	Ala	Phe	Lys	Gln	Arg	Ala	Trp	Gln	Tyr	Leu	Ile	Leu	Asp	Glu	Ala
		675					680					685			
Gln	Asn	Ile	Lys	Asn	Trp	Lys	Ser	Gln	Arg	Trp	Gln	Ala	Leu	Leu	Asn
	690					695					700				
Val	Arg	Ala	Arg	Arg	Arg	Leu	Leu	Leu	Thr	Gly	Thr	Pro	Leu	Gln	Asn
705					710					715					720
Ser	Leu	Met	Glu	Leu	Trp	Ser	Leu	Met	His	Phe	Leu	Met	Pro	Thr	Ile
				725					730					735	
Phe	Ser	Ser	His	Asp	Asp	Phe	Lys	Asp	Trp	Phe	Ser	Asn	Pro	Leu	Thr
			740					745					750		
Gly	Met	Met	Glu	Gly	Asn	Met	Glu	Phe	Asn	Ala	Pro	Leu	Ile	Gly	Arg
		755					760					765			
Leu	His	Lys	Val	Leu	Arg	Pro	Phe	Ile	Leu	Arg	Arg	Leu	Lys	Lys	Glu
	770					775					780				
Val	Glu	Lys	Gln	Leu	Pro	Glu	Lys	Thr	Glu	His	Ile	Val	Asn	Cys	Ser
785					790					795					800
Leu	Ser	Lys	Arg	Gln	Arg	Tyr	Leu	Tyr	Asp	Asp	Phe	Met	Ser	Arg	Arg
			805						810					815	
Ser	Thr	Lys	Glu	Asn	Leu	Lys	Ser	Gly	Asn	Met	Met	Ser	Val	Leu	Asn
			820					825					830		
Ile	Val	Met	Gln	Leu	Arg	Lys	Cys	Cys	Asn	His	Pro	Asn	Leu	Phe	Glu
		835					840					845			
Pro	Arg	Pro	Val	Val	Ala	Pro	Phe	Val	Val	Glu	Lys	Leu	Gln	Leu	Asp
	850					855				860					
Val	Pro	Ala	Arg	Leu	Phe	Glu	Ile	Ser	Gln	Gln	Asp	Pro	Ser	Ser	Ser

Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE LET-60 RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 63 of 91

Customer No.: 21559



FIGURE 21

[illegible]

Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE *LET-60* RAS SIGNALING

Applicant(s): Horvitz et al.

Filing Date: September 12, 2003 Serial No.: N/A

Page 64 of 91

Customer No.: 21559

FIGURE 21

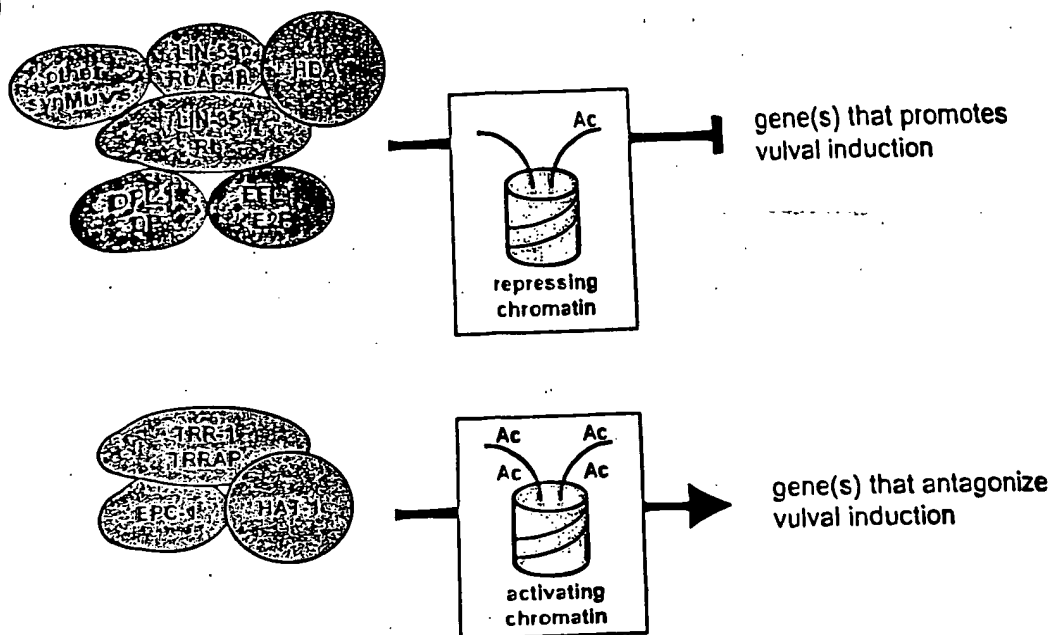
Arg Arg Leu Gly Glu Leu Ala Ile Asp Glu Ala Gly Phe Thr Pro Glu  
 1330 1335 1340  
 Phe Phe Lys Gln Ser Asp Ser Ile Arg Asp Leu Phe Asp Gly Glu Asn  
 1345 1350 1355 1360  
 Val Glu Val Thr Ala Val Ala Asp Val Ala Thr Thr Met Ser Glu Lys  
 1365 1370 1375  
 Glu Met Glu Val Ala Met Ala Lys Cys Glu Asp Glu Ala Asp Val Asn  
 1380 1385 1390  
 Ala Ala Lys Ile Ala Val Ala Glu Ala Asn Val Asp Asn Ala Glu Phe  
 1395 1400 1405  
 Asp Glu Lys Ser Leu Pro Pro Met Ser Asn Leu Gln Gly Asp Glu Glu  
 1410 1415 1420  
 Ala Asp Glu Lys Tyr Met Glu Leu Ile Gln Gln Leu Lys Pro Ile Glu  
 1425 1430 1435 1440  
 Arg Tyr Ala Ile Asn Phe Leu Glu Thr Gln Tyr Lys Pro Glu Phe Glu  
 1445 1450 1455  
 Glu Glu Cys Lys Glu Ala Glu Ala Leu Ile Asp Gln Lys Arg Glu Glu  
 1460 1465 1470  
 Trp Asp Lys Asn Leu Asn Asp Thr Ala Val Ile Asp Leu Asp Asp Ser  
 1475 1480 1485  
 Asp Ser Leu Leu Leu Asn Asp Pro Ser Thr Ser Ala Asp Phe Tyr Gln  
 1490 1495 1500  
 Ser Ser Ser Leu Leu Asp Glu Ile Lys Phe Tyr Asp Glu Leu Asp Asp  
 1505 1510 1515 1520  
 Ile Met Pro Ile Trp Leu Pro Pro Ser Pro Pro Asp Ser Asp Ala Asp  
 1525 1530 1535  
 Phe Asp Leu Arg Met Glu Asp Asp Cys Leu Asp Leu Met Tyr Glu Ile  
 1540 1545 1550  
 Glu Gln Met Asn Glu Ala Arg Leu Pro Gln Val Cys His Glu Met Arg  
 1555 1560 1565  
 Arg Pro Leu Ala Glu Lys Gln Gln Lys Gln Asn Thr Leu Asn Ala Phe  
 1570 1575 1580  
 Asn Asp Ile Leu Ser Ala Lys Glu Lys Glu Ser Val Tyr Asp Ala Val  
 1585 1590 1595 1600  
 Asn Lys Cys Leu Gln Met Pro Gln Ser Glu Ala Ile Thr Ala Glu Ser  
 1605 1610 1615  
 Ala Ala Ser Pro Ala Tyr Thr Glu His Ser Ser Phe Ser Met Asp Asp  
 1620 1625 1630  
 Thr Ser Gln Asp Ala Lys Ile Glu Pro Ser Leu Thr Glu Asn Gln Gln  
 1635 1640 1645  
 Pro Thr Thr Thr Ala Thr Thr Thr Thr Val Pro Gln Gln Gln Gln  
 1650 1655 1660  
 Gln Gln Gln Gln Gln Lys Ser Ser Lys Lys Lys Arg Asn Asp Asn Arg  
 1665 1670 1675 1680  
 Thr Ala Gln Asn Arg Thr Ala Glu Asn Gly Val Lys Arg Ala Thr Thr  
 1685 1690 1695  
 Pro Pro Pro Ser Trp Arg Glu Glu Pro Asp Tyr Asp Gly Ala Glu Trp  
 1700 1705 1710  
 Asn Ile Val Glu Asp Tyr Ala Leu Gln Ala Val Gln Val Glu Phe  
 1715 1720 1725  
 Ala Asn Ala His Leu Val Glu Lys Ser Ala Asn Glu Gly Met Val Leu  
 1730 1735 1740  
 Asn Trp Glu Phe Val Ser Asn Ala Val Asn Lys Gln Thr Arg Phe Phe  
 1745 1750 1755 1760  
 Arg Ser Ala Arg Gln Cys Ser Ile Arg Tyr Gln Met Phe Val Arg Pro  
 1765 1770 1775  
 Lys Glu Leu Gly Gln Leu Val Ala Ser Asp Pro Ile Ser Lys Lys Thr

1780										1785					1790				
Met	Lys	Val	Asp	Leu	Ser	His	Thr	Glu	Leu	Ser	His	Leu	Arg	Lys	Gly				
1795					1800					1805									
Arg	Met	Thr	Thr	Glu	Ser	Gln	Tyr	Ala	His	Asp	Tyr	Gly	Ile	Leu	Thr				
1810					1815					1820									
Asp	Lys	Lys	His	Val	Asn	Arg	Phe	Lys	Ser	Val	Arg	Val	Ala	Ala	Thr				
1825					1830					1835					1840				
Arg	Arg	Pro	Val	Gln	Phe	Trp	Arg	Gly	Pro	Lys	Gly	Arg	Gly	Gly	Trp				
1845					1850					1855									
Leu	His	Asn	Ser	His	Cys	Asn	Phe	Phe	Leu	Thr	Arg	Asp	Glu	Lys	Lys				
1860					1865					1870									
Trp	Phe	Leu	Gly	His	Gly	Arg	Gly	Ala	Asp	Lys	Phe	Gln							
1875					1880					1885									

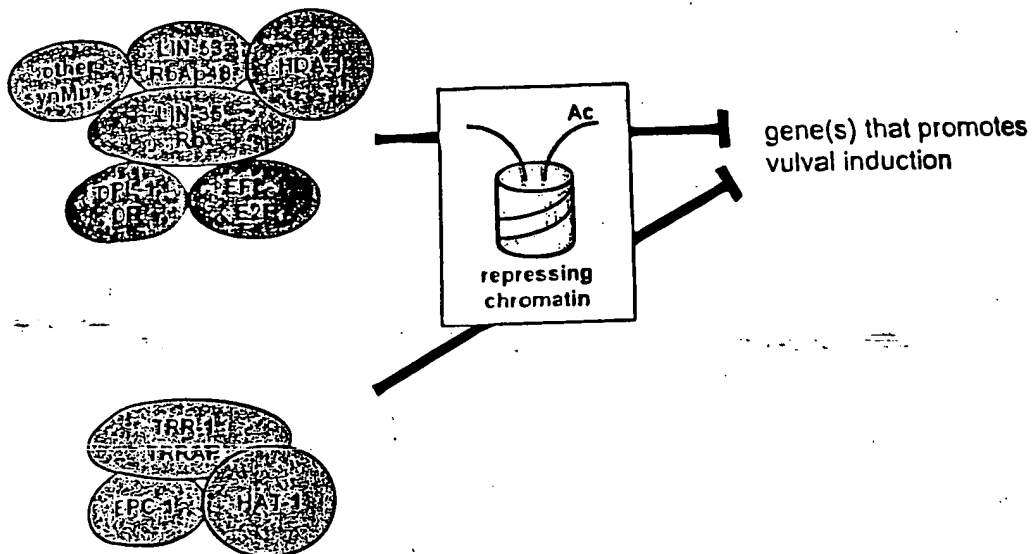
Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE *LET-60* RAS SIGNALING  
Applicant(s): Horvitz *et al.*  
Filing Date: September 12, 2003 Serial No.: N/A  
Page 66 of 91 Customer No.: 21559

FIGURE 22

A)



B)



## Figure 23

*lin(n3628)* genomic sequence (1 kb of upstream and downstream genomic sequence is included in this file).

<u>Exon number</u>	<u>Exon boundaries (inclusive)</u>
1	1001 – 1035
2	1920 – 2062
3	2114 – 2190
4	2241 – 2501
5	2551 – 2903
6	2955 – 3405
7	3497 – 3631
8	4227 – 4690
9	5293 – 6058
10	6696 – 7058
11	7609 – 8338
12	8771 – 8933
13	9511 – 10306
14	10774 - 10851

GTCAATGGAATTCTCGACGCGGATCTTGTTAGAGATGCCGTCGAGAGAGATT  
TGATCAAATTGCGGTACGCTGAAACGGATGCACCAGTTTTACAGGTAAAATG  
GAAATATACAACTCAAAAGTAAAATTTTATGAATTTTCAGATCAACAACTCA  
CTATACACGGCATCCTGGGAGCAAGATCTCGGAACAAATATGGTTCTGCAGT  
CAAAAGGAAAAGAGATGGAAGTGATTTTCGTGTACATCGACCATGATGACTGC  
AGAAAAAGCCCTGTTGACCTCGTTAAGCACCGAAGGATCTACACTAGCCGCC  
AATGCAGAGACTGCTCCGAAATCTGATCTCAGTCGAACTCAACCACGTCAAC  
AATGATTTTCAAAATATAAATTAACATGAAGCTCTGAAATAAACTCATATAA  
CTGCTAAAATAAACTGTTGCTTTTGAAACCAACATTTGTTAGACAACCTGCG  
TCTCACAGTCATTTTTCAATATATTGGCGCCGCGCACACACAAAGAAGAAGA  
ATTCGTCCTCATGGCATGGCATGTGCAGTCAGCGGCCACCCTGTGTAACCACT  
GCGTATCGCATCTTTCCACGTGTTTTTGCAATCTTGCTGTACGTTTCAATTCCT  
CGTACAACCATCTCTTCTACCCCGTTGCCTCCTCCACCATCTCATCTCAATTG  
TGTCGTTGCCCTCCCTCTCCCAAGTCTTTCTGCGTCTCTTAGTGCTCTTCGAG  
AAAAGAACGAGGAGAGCTGTGAGACGCTAGTAGGAAACGCATTCTCAATTC  
GATATAGGCACATTGAGAGAGAGCGAGCGCCGTTTCGACGTCTTCTAGCCTT  
CACATCATCCAGACGACGTTACACGCACACACAGCCAACCCCACTTCTG  
ACAACGAATAGACGACGAAGAAGAGAAGAAAAAGAAGAAGGTACCCA  
TTTTTCATTCCCTTTTTGCCTCCACACTTCACTATTATCGATTTTGTGAGCGAG  
CTCTAATGTTTCAACGCAAAGTGGTATTGCCTAAAAAGCGGTGAGAATTTGCT  
TCAGACAGAAATTCGTTTTTTTAAACAAGAAAAATCCGGTTTCAATTGTCGTA  
GAAGGTCAATTTTTACTTTCAACGCTCTTCATTGACGGAAAACGTTTTTCTT  
TCAAATTTTAAATTACAGAGGCATTTTACTCAAGGTTTGTTTTAAATTAAATT  
AAAAATAAATTTTAAATAGAAATATGGATAATATAAAATGTTTTCTTCAAA  
AAATGCACTCAGGTTTACCAAAAAATCGATAATTAAAAATACGGTCGCAAAG  
GAGCGTCGTTAGCTGCTAATCAATGGTCTTAAACGAAATCTATCGATTTTTG  
TGTAACACACGACGAAGTGCTCCACCGTTATTTTTTGAACGAGTGCGTTGC

FIGURE 23

AATTCCATCCCATTTTGACGTTTTTCTTTTTTTTTTCATCAAATTTTTTAGCATT  
TAAAGTAAAGTCAATGATAACCTGCAAATAATAATGTAAAATTCATTAATAA  
CCGAGAGAAAAAGTCTAAAGTCATAAATTTTTGATAAAAAAGTGATTTTCGA  
AACTAAAAATCATTCAAATTAAGTTGAACCTGATTCTTCAATTTTTATTATA  
TATTAAGGCTTGATCCACTCAAATAAAAGGAGTTTTTAATTGAGAAAAAAA  
GCAAATGAAAAAATCGATAATTAATTTGGGCGCCAACCTAGATTTTAATATG  
TTTTTGTTAGAAATTTGTATATTTTCATCACTCTCTGACTTTAAGCATTCGTAT  
TTTAAGGAAGTGTGAGCTTTCTAATATGTTTTTTATTAAAAAAACATGTTTT  
TAACAATCTCCCTGTCATCCCCATCACCTAATGCACTCAAATAATCAATAATC  
ACAATACTTTTATTTTTTTCTTGACAGAACAGAAATGGTCCAAACGAGACGAAA  
GACAGCTGCAGCTGTACAGGACGGTGGTGCCGTTAAGGAGAACAAAGCCAA  
GCCACCTGCCCTCAAACGCCTACAAAACGAGCAAAACGAGGTCGTCCCCCG  
AAAATTAAGACTGGTGAGCGAATGACTATACGGAAGATTGAAAATTCACGTG  
GAATACTTGACAGATGCCAATACTTTGAATACGCCAAGCACTTCTTCCAACCTG  
GTCGATGACAACTTCTCATTGAGTCTGAATCACAGGTAAATTGATTCTTTTC  
TATTCAAAAATTAATCTAAACTATACATTCCAGGACTCGATTCTCACAAACGA  
AGCCGACTCTTTTCTGGAAAAAGAAGTGGAAGAAATCGAAGATAGTTCAGAT  
ATACTTCCCGATAAAATTAATTCTCCAGAAAAACCAAGTGTTTTGGTGAAGC  
GGAGATCGAGTACGCGGTTAAAAGTGAAGACTGATGAAGATGAAAAAGATG  
TTCCTGTGAACATAGAAGTAGCCGTTTTAGAAGAAAAATCAATTCAAATCGA  
GCCAACATCTCCCGCTCACCCGGAAGATCCTCAGGTGAGCTTTTTTTAAAAAT  
ATGTATTAATCAAAATTCCTTCATTTCAGCCTTCGACTTCTTCTCTTCCACTG  
GTAGAACCAATTGAAGACATTGTGGAGCCAAATGAGCCAACAAGCTCTGCCG  
ATCCTCCAGTATCAAATATTAAGGATGAGGATATTAAGAAGAAGAGCCACT  
GATTAATAAGCCAGCTTCCGATGAGTCAGAATCTATGGATATAGCTAACTCT  
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CTTTCTCTATACCTCTTCCCGACACACCACCTCCAAATTTTGGGAAAAGAGGA  
GAAATACATGTAGATGTAGATCAGAAAAATTCCAAGCAATCAGGAGAATCAC  
AATCGCCTTGGGAGCGGTAAGAATATTTATCCTAGCCAGGTGTTATAACAAA  
ATTGAATAGTTTCAGAGCAAGAGAAAAGTCTGCATCGAACCCATTGTCCTCT  
CCAACAATGAGCCGACCCAGGATACACTTCCTTCATCCAGCATATCAAAGTTT  
CACAAATGATTCAAGTTTACCTCTACCACCACCGCCACCAGAGCCGGCTCCA  
GCTCGTGAAAAAGTGGAATGTTGGTGGTCCAACCTACTTTCAAATGACTTTCA  
AAAAAGCTGCAAATATTCCTATCTTGAAGACATCGGCATTTGAACAACCATC  
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TTCTTCTACATCGATAGCCTCCGAGTCTTCTCCAGCGAAAAGAAGCTCAAATT  
TCGATTTAACTGCCTCAAATGAGCTTCCACCACCTCAGATGGTTGAACTTCCC  
AAGCTCTCATTTTTTCAATATGCCTCCAGCCGTTTCGCTCCGCAGAGGTTAGTTA  
ACTTTTTCCCGGTTTCATGAAATTTAGCGGTATCTGTCCTCCTTTTGGTGTGT  
GCCCTCACAACCTAACCTCTTTTATCCAGGACGATTCTGCGATGACGTCCGAA  
GAACCGATCCTTCTCCTCCGTTCTCCGAATTCCGCCACTCCTGATGATGATGC  
ACTTTTCTCAGACCCACCACCCACCAAGATGACCGAATCAGAAATTCAA  
GCACTGGTGAGCCAGATCACACATTTTCGATGTCGTGTGTGGAACCCAGGAAT  
TTCAGACCGTTTTTTCTTTACACCTCATCCCCTTTTGTGTTATGTTAACATTCA  
TTTGTGTCTCAAACACTGCATGCTTTTGCACCTTGGAATTAATAAATAATGCG  
TTCTGGGATTTTGTGTGTTAAGGTGGAGTAGAGTTTGTGAGGCTAGAAAGTAT  
GCCTTTTTCGTTTCTCCACTGCAAAATTTTCGTTTGAAAAAACAAAAAATTTA  
CTAAAATTTGAAATTTACCAACTTGCCGTTGTCACAGCTGCTGAAATACAGT

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GENES THAT ANTAGONIZE LET-60 RAS SIGNALING

Applicant(s): Horvitz et al.

Filing Date: September 12, 2003 Serial No.: N/A

Page 69 of 91

Customer No.: 21559

FIGURE 23

TTTTATTGCATTTTCACCCTTTATTGCATATTATTATTAGACACCTTTTAGGTC  
AATAGGCAACCGAAAATATCCGAATTTGACTTAAAATGTACCTAAATTAAGG  
AACTAACTTGAGATATACGACTAAAAATGCAATAAATTGTGAGAATTATTGT  
TATGAAATTCAGCCGTTTTAGGCTAGTTTTAGCCAAAAACCGACAACTCTAT  
TCCAATTAATTTTCCACTCCTGCACCTCGATTAGTGATTTTTTTGAAGAAAAAA  
AATTATCTTCTTATTTTCAGAAAGTAGCGACGGAAAAAGTGAATCAAGTAATT  
GCTCGACGTGAAGATTCTGAAAAAGATGTACGTACAGAGAAGATCGAGATG  
ATTATGATAGACGACGTGACGACCGTGACAGAAGATCCAGAAAGACTGATTC  
GGAACGAAATGATCAAAGAGGACGACAACGTGAAGATGATGAACGAAGAGC  
TCGAGAACGAGAAAGAGAAGTTACGAAACGACATGATCGGGAAAGGGAAGA  
GATGCGATTACAGAAACAAAAAGATGAGGAAAGAAGAAAGAAAGATGAAG  
AGGAAAGGATACAAAAAGAGAATGATGAGAAAAAACAAAAAGAGGATGAA  
GCCAAAATGGAGGAGGAGAAAAAGAAGATTAAAGAGGAGGAAATGAAGAT  
TCCTGAATTTGAGTTGATTAGCGAATCAAATATTTGACGAGGAATGCGAAT  
AAAAAGAAGACTGAATCCTTAACGTAAGTTATTATTTATAAATTTGACTTAAA  
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AAAAAATTAAAAACACATAAATTTTATTTTGAAAAGTAATGAGAAAAACTAT  
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TTAAAGGAGCACATCTTTCTGAATTTAACAAAAATTCGGAGATTTTTCTTTTT  
TTCGTGTTTTCTGGCGAAAAAACGATTTTTTCGCTTTTACCGGAAACGGTATC  
CGGAGGAAAAAAGACGAAAAAAGCGAAAAATTTTAAGAAGTTTCAAGAT  
TAGTTACAACTCTTTTCAAAGCAGATTCTACAGTTTTTTGGGGTTTTGCCA  
AAAAATTTATGAAATATAATGTTTTTTAGACTAGAAAAATAAACTAATTTTAA  
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GGATGTGGACTTCGAGCAGTGAAAGACATAAAAAAAGGAAGATTCATCATTG  
AATATATAGGAGAAGTTGTGGAAGAGATGATTATGAGAAGAGAAAAACGA  
AATATGCAGCTGATAAAAAGCACAAACATCATTATCTCTGTGATACTGGAGT  
CTACACGATCGACGCAACAGTCTACGGAAATCCATCTCGATTTGTGAATCAT  
AGTTGTGATCCTAATGCTATATGTGAGAAATGGTCTGTACCAAGAACTCCTGG  
AGACGTTAATCGAGTTGGTTTTCTTCTCGAAACGATTCATTAAAGCCGGCGAA  
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TTTCTGTGGAAGTGCTTCATGTAGTGGATGGATTGGGCAGAAACCGGAAGAA  
TTTTCATCTGATGAGGATGATGATATTGTGACTACAAGGCATATTAATATGGA  
TGAAGAAGAAGAAGAAAAAGTTGGAAGGTCTTGATCATCTTGGAATCATGAA  
CGGAATGAAGTGATCAAGGATATGTTGGATGATTGGTCAATTCGGAATAAGA  
AGCATGCTAGGAAGGTTATCACAATTGCGGTAAGCATTATTTGTAGAGAAA  
ATTTAAAAATTAAAGATGGAGTACCGAAATCCGAGAAATATATTTAATTGAC  
TCCAATTTTCTCTGATTCCGAATTTTAAATGAAAAAATTCAAAAAATTT  
CCTTGATTTTATGTTTTAACTTGAAATTGCGAATTTCAATTTGTACAGATTTTTG  
AAACGCCGAATTTTCGCGCCAGAGAAGCCATGTGTCGATTTTTTGAGATTTGTG  
TATATTTACAAGATTTTGAATCTTCATCGGATGCTGATTTGCGTTTTTTCATCAT  
TATATTATCAAAAAACTAACAATTTGTTTCGGTTTTACGGAAATTAACAATATA  
GACTAGACATTTTCGTAAATATACACAAATCTCGTAAATCGACACATGGCGTC

Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE LET-60 RAS SIGNALING  
Applicant(s): Horvitz *et al.*  
Filing Date: September 12, 2003 Serial No.: N/A  
Page 70 of 91 Customer No.: 21559

FIGURE 23

TCTGGCGCGAAAATTCGGCATTGAAAAATCTTATGCGGGCACTAATGAAAT  
TCGTGATTTCAAGCTGAAATATAAAATCAGGGAATTTTCCTTGCATTTTTTCA  
CTCAGAACTTCGGAATCAGTTGCAAATTTGGAGTCATTTGAAAATATTTCTCA  
GATTTTCGGTACTCCACCTTTATTATAATTTTTTAAAATTTTTTAAATGATTTTTT  
TTCCATGTTCAACAAAAAATAAATTTTCAGTCTGCAATGACCGATTACTCTC  
AACGTGTGGATGTCATTCAAGAAATCTTCTCCTCAGACACCTCCGTAACCGTT  
CAAAAATTCTATGCAAAAGAGGGAATGGCTACATTGATGGCTGAATGGTTGT  
CTGAAGATGATTATTCGCTGGATAATCTGAAACTTGTTCAGCTATTCTCAAA  
GCTCTTCACACTGAACTATTCGATTCTGTCGCCAAAAATGATCGACTCTTACG  
AGATTCTACATCACGATGGGTCAATGCGAAAAATGGATGAATATGTTGATATA  
CAAGTGATAGCTGATTCACCTATTGCTTGTGTTGAAGATCCCGTACAGGAGTA  
CAAGGATGTTTGCAAAGTTATAGAGGTATATACATATTAATTTTTTAAAAAAG  
AATATTTTTTGCATGTCACAAAATATTTGGAAATTTTCCCGAAAAACCCATGA  
AATCAAAAAACAAATTAATAGTAAAATTATTTCTCCTACGAACATTTTTTCG  
ATTTTTTCGTTTTCCGATATTCCTTTTTAAAAATCTGATTTAAAAAATAAACT  
TAAATTTTAGGTCTTTTTGCTCCTTTTTAGAAGCAATTTATATGTTTTTTAAAA  
CAAACTTAAAATTAGCATTTTTATGGGTAATTTTCTGAACACATTTTTTTTTT  
GAAAAAATGGCCAGAATTTCAACCACTTCTCCGTAAAATCGAAATTAATA  
ATTTTTTCTCTATACATTTTTCAAAAAAAGACTCCTCATTTATTGTATTAGATA  
CAAATATATGTTTTCTCATCAAAATTTACGAAATTTGTTATAATTTTGAATTT  
TTTTTGTTTTTTTTTCGAAAAATTGAAAATTTTCTAATTTTGAAACGATATTAT  
ACAATTTTCAGCGCCATCAATTTAACTAATTAATAATTTTCAGAAAGGTCTCGT  
CGAAAACCTTCACAAGAGCCAAAGAGATGGCCTATCGGTTAAATCAATACTGG  
TTCAATCGATCAGTGAGCTTCAAAATTCAAAAAAGATACGTGATCCTGTGC  
CAAAAGATGTTCCAGTCAGACAAGAAGATGCTACAACATCATCACAATCTCA  
TGATAATAGTAGTAGAACTGTATCACCGAATCATCGACATCATTATCTTCAT  
ATTCAAATTCATGTTATCAAGAACGAGAACCATCTCATATACGATTCTTTAAT  
AATGGAAATGATGTTTCATCAATATCGTTTTTGGAGGTTATCATGGAAATACTA  
CAATGATAACTATTTTCAGTAGAAGGCCCAATAAAGGATTCATATCGAGATCGC  
CGTCGATTTAATGGACGTGTTTCGAGAAGTCGATCAAGAAGTGTCTCACCAC  
AGAACTATAAAAGAAGAAAACCTCGATGAACATGACAATAATCATCGTCAGC  
GTTCTCCAATTCGTGATCGTCACACATCTCCCGGCGGCGAAAAGACTCCTAGC  
TCGAATAATTCTGGAGAACGAACTATAAAAGACTGGATATTCGAGGAGCTC  
GTATAAAACTATAAAAGAAGATTTGGAAGCTGCTGCTGCTGCTGCTGCTGC  
TGCTGCTGTACCATCAGAAGTGCAAGCTTATCCTCATGAACATACAGCTGTAC  
ATCAGAGTGTTTATCAGATGCCAGGTTATGAGTCTTATGGTTGGTTTAGTTTT  
TTTTAAAAATATCATTTACCAGGGTGCCATTTTTTAAAAATAAAAAATAACTCGGA  
AAATATGTTTTTAAAAAATTTTCAGAATTTCTCTCATCAACATAAAACTTGATA  
-AAAATCGAATTTTTATTATTTTCTAAACATTTTTTTCGGTTTTTCCGAAAATCAA  
AAAAAAGTTTAGAAAAATAGCAAAAAATCAGTTTATTAGAAATCAAATTTTG  
TTCGTTTTGATAAGAAAAAACATAAGAAAAACATGTTATTTTCTTCTGAAAAA  
GAAAAAATCGAAAAATCTATGGCCTTTTGGCAAAATGTTTTGGACCAAAAA  
ACAAAACAAATAGCATTAAATATTAGTTCTTTTGTCTTCTTCTAAAGTTAA  
TTTTCTGAAAGTCTTGCTTGTCTGATATCAAATAAAAAACATTTTTTCAGGAGTA  
TATGATCCTGTAAATGGTGTCTACATGTATCCTCATCCTGGCGCTGGTTACTA  
TCCACCTGCCTATCCACAACAACCGATTATGTTAACAATGGACACTCTTCCAC  
CGAATGATCGTCTTGGTGAACTTTACGAGAAAGCCAGTATCGAGCAGCTAGC  
GTGAGCATTTTTTAGTTTAAACCTTTCGGATTACCTAGAAAAATGTTACCTTT

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GENES THAT ANTAGONIZE LET-60 RAS SIGNALING  
Applicant(s): Horvitz et al.  
Filing Date: September 12, 2003 Serial No.: N/A  
Page 71 of 91 Customer No.: 21559



FIGURE 23

GACGCAAAATTACGGTAGCAGGTCTCGTCGCGACCGAAATTTTTTCAGCGGAG  
TACGGTAGCTTCCCATGAATTTTTTTGCTGAACCTTATCTTTCTGATAACAAATA  
GTAACATAAAACATGAAAAACTGAATAAAAAATTGATATCTTTACCTTATAGGC  
TCTTTAAGGGCGCAGACACAAAACTGACCGGCTACCGTAATTTTTTCGTCAA  
AAGTCACACATTTCTCAACTGGTGAAATCCGAAAAAATTGAAATTTTTACTAC  
TCGTCCGACTGTTTAGAAAAAGATTAAAAAAGAAAAAAGAATGTCGGTT  
TTTCGAATTTTTCGATTTTTCAAAGAAAAAATCAATATTTAAAAATCATTTCG  
GTAATTTCCCTAAATTTGTAAAATATAATTTCCAATAAATGTTTTTTGTTTTCC  
GGAATTTTAATAAAAAATCAATTTTCGCGTAACAAAAATGCGAAAAAATGAC  
TAGCCACTCGAATATAATAACACATGAAATAAAATTAAAAATTATTACAGTCA  
ACGAGATGCAATTGTGAGACAAGAACTTGAGCTGATACGTATTCAAATCGAA  
AGAAAAACTGCTCAAAAAGAAGCGATCAAGGCCGCTTGCCGTCGTGCTAACG  
AAGAAGAAGCTAAACGACAAGAGGCACTTGCAAAGACGAAATATGTTTGGG  
CGATTGCAAAGTCAGAAGCTGGAGAGACGTATTACTACAACAAAATAACAA  
AAGAGACGCAGTGGACAGCACCAACACCAGTTCAGGTCTTCTCGAACCGGC  
TTGTGGTGCATCTCCTGATACTACAGTTGTCATTGCTGACGAGATTACTGAAG  
AAGAGCAACAAGCTGAAGTTCTGGAGAAGCCGCGTGTTGTTAAGGAAGAAG  
TTATCGAGCCAGGTTCACAATCTGAAACTCAAAAAGAATCTCCGGAGAAAGT  
TCGAGTTGTTGTACCGAAAGTTGAAGTTGAAAGATCACCGTCGCCAAAATCT  
TCTCGTGATCGTGAGAAGGATCGAGAGAAATCTCGTGAGAAAGATCGTGAAA  
GAGATCGTGACAGAAGAGAAGGTTCAAAACATCGTGATAGTTATCATGGACA  
TCGAAACGGCAGCAGTTCTGTCACTGAACGACGTATGCGAGAGTTCAAACAT  
GAGCTGGAACGATCCACTCGATCTGCCGTTCTGTTCTCGTCTACAACATCAACG  
TGACGCTTCTAGTGATAAGACTACTTGCTTATTAAGTTAATATATCGAGAGA  
TTTTCAAACGAGAAAGTGCGCAGAGTGGATTTGATTATCGATTCACTGAGAA  
TACTGATAAGAAGGTAATATTATGGACCAAAAAATAAACAATTGAAAAAAA  
AACCAAAAAAATCTGATGCTTGAATTTAAAAAACAATGAAAGAGTGCA  
ATTTTTTAGGTTTTTTGGTCTTTTTTTTTTGAAAAACCAAAAAATAAATTTTTT  
TCCAAAGTACCAAACTTCATTTTAAAAAATTTTATTTGACATAAAAATTGATA  
ATTTAAACTAATTTGAACATTTTTCCGCAAAAATTATAGATTTTTCTGCCAA  
TTTTAGATTTTTAACGTTTTTTTTCGGACAATTAATGTTTCGAATCATCAATCA  
GAATGAATATGATATCTGATGAAATTCAAAAATAATGCAATTTAAATAGAAA  
ACGGTACAAAAGTTTTGAAAAATTTAGAAGAATTCTAAAAAATCCTGTCC  
TTCAGGACAAAATTCAACCTTTTTCTCAAAACACAAAAATTACTTTATATTAT  
TTTTCAGGTGAAAAACTACGTCAAGTCATATATCGACCGAAAACTCGAATCA  
AACGATCTCTGGAAAGAATACTCTCGGCCATGAGCTTTATTTTTTAATTTAAA  
TTTTATAAAAAAATGTTTATGCTTGTTTTTTTCTCTATAGTTCCCTCCTATCCC  
CCCCCTCCCCTATCGCCTAAAAAATTGATCTCTGTCTGATTTCACCGATTTCGGT  
TTTATTTGATCCCATTTGAACGAGTATATCATCATGTTCTGAACCTCAACGTT  
GCACATTTTATCCCCTAGTTTTATGTCCCCAGAATTGTTTTATACTATCCTGT  
AATCCACCTCAAAATGACAGCCATGAAAAGCTGTTTTTTCATGTTTTCTATTTT  
CTTGTTGATCGTATTTGCGCGCGCTTTTGTGCGCAAATTTTTTTTGTAATTAA  
AAAATGAATTACGGATGTTGAATTTTTAAATTTATTTTTTTAAAGAAAAATTG  
TGGAAGTTTTTCAGATTCTATACTGCTTATTTTTACGCTAAATTTTTTTTCGAA  
GTCCCCTTTTTTCAAATCGAAGTGTAAGTGCCTCCACGATCAATAGAGACTC  
TCCGCCCTCGAACCATGGGTCTCGTTAGGTATTTGGCAGACTTACCGTAAATT  
CAAATGTTTTATTACTTCGCGACTAATTTTTTTTATTCATGACTCAATTTTTTAT  
CAATTCCAACGAAAACTAATTA AAAACAACGGAAAAACATAACGAAAAATG

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GENES THAT ANTAGONIZE LET-60 RAS SIGNALING  
Applicant(s): Horvitz et al.  
Filing Date: September 12, 2003 Serial No.: N/A  
Page 72 of 91 Customer No.: 21559

FIGURE 23

CTTGAAAATTGCAGACATTTCCGAAATTAATTAAATTCCTAACGAGACCCATG  
GCTCGGGGGCGGAGTGTTCGATTAGCCATGGAGCGCGTTGAGATATTCCT  
AAATTTTTCTATTCAGATGTCGAATCAATCAAAACGGGTCACAGTGAGAATT  
GAGCATTCTGAAGAACAACACTTTTTTCGAAAAGTAATTTTCAAATTTTGATCCAAA  
GAAATTATTCGTCAATTTTCAGAGTTTTAAAATTCCAACATCAAGAGCAAGA  
AGATCGGAAGCTCAAATATGTTCTGCACAAAGCTCACGAGAATCTGAGAAAG  
TGCCCATTCGAGATTCTGACAATTG

Figure 24 LIN(n3628) Protein

MFQRKVVLPPKRTMVQTRRKTA AAVQDGGAVKENKAKPPAPQTPTKRAKRG  
RPPKIKTDANTLNTPTSTSSNLVDDKLLIESESQDSILTNEADSFLEKEVEEIEDSSDI  
LPDKINSPEKPSVLVKRRSSTRLKVKTDEDEKDVVNIEVAVLEEKSIQIEPTSPA  
PEDPQPSTSSLPLVEPIEDIVEPNEPTSSADPPVSNIKDEDIKEEEPLIKKPASDESES  
MDIANSESGNDSDSSEADPRTIPSFSLPDTPPPNFAKRGEIHVDVDQKNSKQSGE  
SQSPWERAREKSASNPLSSPTMSRPRIHFLHPAYQSFTNDSVSPLPPPPPEPAPARE  
KVENGGPSTTFKMTFKKAANIPILKTSAFEQSSPPSSSVSSSISLSEVNSSTSIASES  
SPAKRSSNFDLTASNELPPPQMVELPKLSFFNMPPAVRSAEDDSAMTSEEPILLR  
SPNSATPDDDALFLTTPPPPKMTESEIQALKVATEKVNQVIARREDSEKDVRHRE  
DRDDYDRRRDRDRRSRKTDSENRDQGRQREDDERRAREREREVTKRHDRER  
EEMRLQKQKDEERRKKDEEERIQKENDEKKQKEDEAKMEEEEKKKIKEEEMKIPE  
FELISESKYLTRNANKKKTESLTCECHRTGGNCSDNTCVNRAMLTECPSSCQVKC  
KNQRFKKKYAAVEAFHTGTAKGCGLRAVKDIKKGRFIEYIGEYVERDDYEKR  
KTKYAADKKHKKHHYLCDTGVYTIDATVYGNPSRFVNHSCDPNAICEKWSVPRT  
PGDVNRVGGFSKRFIKAGEEITFDYQFVNYGRDAQQCFCGSASCSGWIGQKPEEF  
SSDEDDDDIVTTRHINMDEEEEEKLEGLDHLGNHERNEVIKDMMLDDLVRNKKHA  
RKVITIASAMTDYSQRVDVIEQIFSSDTSVTVQKFYAKEGMATLMAEWLSEDDY  
SLDNLKLVQAILKALHTELFDSKANDRLLRDSTSRWVNAKMDEYVDIQVIADS  
LIACVEDPVQEYKDVCKVIEKGLVENFTRAKEMAYRLNQYWFNRSVSFKIPKKI  
RDPVPKDVVRQEDATTSSQSHDNSSRTVSPNHRHHSSSYSNSCYQEREPSHIRFF  
NNGNDVHQYRFGGYHGNNYNDNYFSRRPNKDSYRDRRRFNGRRSRSRSRSVSP  
QNYKRRKLDEHDNNHRQRSPIDRHTSPGGEKTPSSNNSGERNYKRLDIRGARIK  
TIKEDLEAAAAAAAAAAVPSEVQAYPHEHTAVHQSVYQMPGYESYGVYDPVNG  
VYMYPHPGAGYYPPAYPQQPIMLTMDTLPPNDRLGELYEKASIEQLAQRDIVR  
QELELIRIQIERKTAQKEAIIAACRRANEEEEAKRQEALAKTKYVWAIKSEAGET  
YYYNKITKETQWTAPTPVQGLLEPACGASPDTTVVIADTEEEEQQAEVLEKPRV  
VKEEVIEPGSQSETQKESPEKVRVVVPKVEEVERSPSPKSSRDREKDREKSREKDR  
ERDRDRREGSKHRDSYHGHRNGSSSVSERRMREFKHOLERSTRSAVRSRLQHQR  
DASSDKTTWLKLIYREIFKRESAQSGFDYRFSENTDKKVKNYVKSIDRKLESN  
DLWKEYSRP

## Figure 25

*lin(n4256)* genomic sequence (1 kb of upstream and downstream genomic sequence is included in this file).

<u>Exon number</u>	<u>Exon boundaries (inclusive)</u>
1	1001 – 1096
2	1166– 1453
3	1501 – 2199
4	2298 – 2730
5	3234 – 3847
6	4148 – 5778
7	6111 – 6333

GCTTGCATCGAAACTCTTCTCATTATTTACGTGATGATCACATCTTTCGTTGGG  
 CTGTA CTCCCTCCGGTTCTTCGTTCTCTTCGACCTGTTCGAAAAGATACTCCA  
 ATGCCAACGATAATTATTAATTCTTCAATAGTTCTTGTTGTTGCATCCGCTCTC  
 CCAGTAGCTGTAAACACAGTTGGAATGACAACCTTTTGATCTTCTCGGCTCCCA  
 CTCATCGCTCCAATGGCTTGGATCATTTTCGAGTCGTTGTTGCCTATAATACTCT  
 ATTCGTCGTGTTGTCTGTCTGCATTTCTCTTCAATCAATTGACTGCTTCAATGAG  
 AAGGCAAATCTGGAAGTGGTAAGCTGTGCAATTTAAAGTTTAAATTCTTATTA  
 ATTTTTTGCAGGATATGTCAACTACGATGTGGAATCAGACGGGAGAGTGAT  
 GCGGATGAAACCATGAGATCCTTAGAGGCGATAAGAAAAGCAATTGAATTT  
 CTTTCCTTTTTCAACACTTCTTACCCATGTTTCATCATTTTAATCTTTTCATTACA  
 AAAACAAGGTCCTATTTTTTTTCTCGGGTACTACTCGCCTTTTCTAATAATTCA  
 GAATCATCAATTTTTGCCAACCTCTAGCTTTACATGTCTGTTTTTCATCATTTT  
 CTCTCAAGCATTCTCCTAATATATTATGTTCCCTAGTATTTCCCCTCAGTCAGC  
 AATTTTCTCGTCGTCGAAACCGTTTAGCTTTACTTTCAATCAAAACGTGGAAC  
 ATTTTTCAAACATTTGAAGCCAAAAAAACCAGGGCTTTTGTATATGTACCA  
 TATTTTCCCTCTGATTTTCTTTATCGCCTTCTCTTTTCATGTAGAATAACTGAA  
 ATACAAACCATTTTAATTTTTTCTTTAATTATCAATACTGTCCGTATAGGTAA  
 AAATTATTTCTTCAGGTTTGAAAAAATCCGAAATATGTATCTGCAACTCTTCA  
 GGGCATTGCCTCAATTAATTTTTATCTAATATTCAGATGGACCAACAAGAACC  
 ATCGAATAACGTAGATACGAGCAGTATTCTTTCGGATGATGGGATGGAAACA  
 CAGGAACAAAGTTCATTCGTCACCTGCTGTGAGTGAAATTATTTAAAATTTTCGC  
 TTCGGAGATTTCATTGTCTATATAATTCAATTTATCGATTTTCAGACAATTGACC  
 TAACAGTGGACGACTACGATGAAACAGAAATACAGGAGATTCTGGATAATG  
 GAAAAGCAGAAGAAGGAACAGATGAAGATTCTGATTTAGTTGAAGGGATTCT  
 TAACGCTAATTCAGATGTCCAAGCGCTCCTTGATGCGCCATCTGAGCAAGTA  
 GCTCAAGCTCTTAATTCGTTCTTCGGAAATGAGAGTGAACAAGAAGCTGTTG  
 CAGCACAAAGACGGGTTGATGCGGAGAAGACTGCCAAAGATGAAGCTGAAC  
 TCAAGCAACAGGAAGAGGCGGTTAGATTGCAATAAAGGAAACAATAATAAA  
 ATTATTTTATTTTCAGGAAGATCTTATTATAGAAGATTTCGATAGTCAAAACTG  
 ATGAAGAAAAACAAGCAGTTCGAAGACTGAAAATCAACGAATTTTTATCGTG  
 GTTCACAAGGCTCCTTCCAGAACAATTTAAAAATTTTCGAATTCACAAATCCGA  
 ACTATCTGACAGAATCTATCAGCGATTACCGGTTGTAAATGTTCGATAAATGC  
 AAGGAAATTGTCAAATCGTTCAAGGAAAGTGAATCACTTGAGGGACTTTCAC  
 AGAAATACGAATTAATTGATGAAGACGTGCTAGTCGCTGCTATTTGTATTGGC

FIGURE 25

GTTCTCGATACCAACAACGAAGAAGATGTCGACTTTAATGTTCTATGTGATGA  
TCGTATCGACGATTGGAGTATAGAAAAATGTGTCACTTTTCTTGATTATCCAA  
ATACTGGATTGAATTCGAAAAATGGACCGTTGAGATTCATGCAGTTTACTGTC  
ACATCACCTGCATCAGCAATTCTCATGCTCACTCTGATTTCGATTACGCGAAGA  
AGGGCATCCGTGTCGATTAGATTTTGATTCAAATCCGACTGATGATTTACTCT  
TGAATTTTCGATCAAGTGGAATTTTCTAATAATATCATTGATACGGCAGTCAAA  
TACTGGGATGATCAGAAGGAAAACGGTGCGCAGGATAAAAATTGGCAGGCGA  
GTATTAATCAAACCTCACAACCTGTTTTGAAAGTATTTTCATAATTATCACTTAA  
ATACCTTTTAGAGAGCTCAACGACTTCTTCCACGAAATCGAGTCAACATCAGC  
AGAATTCAAACAACATTTTGAGAACGCCGTGGCAGCCGTAATGAAATAATT  
CAACTTGTCAACGAGAAAAATCCCGATTTTGATGGCACTGAGGCTGCTGTGA  
ATGAGAGTTTTACATCCGATCAACGAACCGAAATTATCAACTCTCGTGCAAT  
AATGGAGACATTA AAAAGCCGAGATGAAGCTCGCCATCGCCGAAGCTCAGAA  
AGTTTACGACACCAAGACTGACTTCGAAAAATTCTTCGTTTTGACAGTTGGAG  
ATTTCTGTCTGGCTCGCGCCAATCCTTCTGACGATGCAGAATTAACATACGCC  
ATAGTTCAGGATCGTGTGGATGCAATGACCTATAAGGTTAAATTTATCGACA  
CAAGTCAGATCAGAGAGTGTAACATCAGAGATTTAGCCATGACTACGCAGGG  
AATGTATGACCCGAGTTTGAATACATTTGGTGATGTTGGTGAGTTTAAAGTTA  
AAATTGATATTTAATATTACATCTGTTATGTAGAATAAGGGTTTCGGTTTTTC  
GATTTTATTAGAAAATCGAAAATTTTAGTTTTTGTGTTAAATTTAAAAAAATC  
AAAATTTGATTCATCTATCAAGTCCGTTTTTCTCTCTCAAATTTGACAAAATTT  
TGATAATCTAGAATTTTCGTCCCGTATATTTTTCAACGAAAAACCATTTAAAA  
TTTTCCATGATTGGATTTTCGGTTGATCTAGAAAAAAATGGTGCTAAACACTA  
AATTTGAAAAAGTTTGAAACAAATTCAAATCCAAATATTTTCATGAAAACTT  
GTAAAATATATTATGTACACAAAAAAACGTTTCAAGTGTAGCAGTTGTTTTT  
GTGGTCCCAAAAAAGCAGATGTTTGTGAGAATCCATTAAACAACAAAAAAT  
CCAAAAACTCAACCTGGCCTAGATATCAGTTTCATGATCGAAGTATCTAAAA  
TCATTGTTTTCAGGTCTTCGAGTTGCCTGTGCGCAAGTTATTTCTCGAGCCAA  
TTTGGA AAAAAACAATTTGGCTTACCGGTACAGCTGCCGGACGTCGCAGAG  
CTCATAGATCCGATTTTCTAATTTTCTTCGACAACGGAACCGATGCATACGTG  
TCAGCTCCGACAATGCCTGGTGAACCAGGTTATGAAGTTGCTTCTGAAAAGA  
AAAGTGTATTTTCTCTCAAAGAAATGATTGCGAAGATGAATGCTGCTCAGATT  
GCTATTATGGTTGGACAGCCAGTAGGAAAGGAAGGAAATCTGGATTATTTTT  
TGACATTTTCATTGGATTTCGACAATCTCACAGATCAGCGTATATTCGGGATTTT  
ATGAAAGAATTTCCGGAATGGCCACTTCTCAAGATGCCAGTTGGAATGCGAA  
TCTGTTTGTACAATTCTCTTGTGATCGACGTAAGAAAAATGGTGACAGTGATT  
GGAAGTATCGAGCTTTTGCTATTGTGAGACACGAAGCACCGAATCCATTGG  
CTCCTGGGAATAGATGTACAGACTTTCCGTGCAATGATAGAAATCATCAGCA  
TATTGACGAGAAAAATCTATAGAGGATCTCATAGATTGGAAGGCGCAGCGGTA  
AGATTTTATTTGAAAAATTGATACAAAACGAGGATTTTCTAAAATTATTTTAT  
TTTTATTTGATTTGATTTCTTATAATTGATAATCAAGGTTTTTTGGATGTTTTG  
TTAGAGAAATCGAAAAGGGAACTTCCAAAAAAAAGCTGTGAAATCAATTTT  
TGCTTTTAATAATATCCAAGTTTCATCTTCAAAGTTTTTTCTATAAAATGGACA  
CAAACTTTTCAACGTTTTCAAAAAAAGGTTCCGAAAATATGAAAAAAGGAG  
AAAGAAATCATGAAAATTTTGTATTATTTTCAGCACAAAGAAGCACATGATCTC  
GACAAATAACAATCTGTGCAACGCAGAAAAGACCAGCTTCAATCACAGTTC  
GAGCCAACCGACATGATTCGTTTCGATGCCAGAGAGGAATCACCAACAAGTCG  
TTAAAAAGAAAACGACGGGCACCAATCAGAATGTCGCTTCGACAAATGATGC

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Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 76 of 91

Customer No.: 21559

FIGURE 25

AAAATCGAAGAGAGAAATTGAAATAAGAAAGAAAAATCAATTCTTATTTAAC  
AAGATTATTGTTCCAATACCCGTCCTAACACCATTGGAAAATCTCAAGGCTCA  
TGCTCAATGTGGTCCAGATTGTCTACAGAAAATGGATGCGGATCCGTATGAA  
GCAAGATTCCATCGAAATTCACCAATACATACTCCTCTTTTGTGTGGTTGGAG  
ACGAATTATGTACACAATGAGTACTGGAAAGAAGCGGGGAGCAGTGAAGAA  
AAACATTATTTACTTTTCTCCATGCGGAGCCGCTCTTCACCAGATCAGCGACG  
TCTCTGAATATATTCATGTACCCAGAAGTTTATTGACGATTGATTGTTTTTCAT  
TTGATGCACGAATCGATACTGCCACTTATATTACTGTTGACGATAAATATTTG  
AAGGTTGCTGATTTTTCGCTTGGAACCGAAGGAATCCCAATTCCACTAGTGAA  
CAGCGTGGATAACGATGAGCCTCCATCATTGGAATATTTCGAAACGACGATTTC  
CAATACAATGATCAAGTGGATATATCGAGTGTTAGCCGAGATTTCTGTTCTGG  
ATGCTCTTGTGATGGTGATTGCAGTGACGCATCGAAGTGTGAATGCCAACAA  
TTGTCCATTGAAGCAATGAAACGACTCCCCCATAATTTACAATTCGACGGAC  
ACGACGAATTGTATGAGAGTTCAGAAAAACAAAATAAATTTTTAAAACATTT  
TTTTTTCAGAGTTCCTCACTATCAAAATCGTCTTCTCAGCAGTAAGGTTATCA  
GTGGACTCTATGAATGCAACGATCAGTGTTTCATGCCATCGAAAGTCTTGTTAC  
AACAGAGTTGTTTCAGAACAAATATCAAGTATCCTATGCATGTGAGTTTATTTAA  
CGATGATACATACCAATTATTGTTTTTTCTTCAGATCTTCAAACACTGCTCAATC  
CGGATGGGGAGTCCGAGCTTTGACGGATATTCTCCTCAAAGTACGTTCAATTTGCA  
CGTATGTAGGTGCTATACTGACGGATGATTTGGCTGATGAACTAAGAAATGC  
GGATCAATACTTCGCTGATTTGGACTTGAAGGATACCGTGGAGCTGGAAAAG  
GGTCGCGAAGATCATGAAACTGATTTTGGTTACGGAGGAGACGAGTCAGATT  
ATGATGACGAAGAAGGAAGTGATGGTGACTCCGGTGATGATGTAATGAACA  
AAATGGTGAAACGTCAAGACTCTTCGGAGAGTGGTGAAGAAACAAAACGGC  
TGACAAGACAGAAAAGAAAGCAATCTAAAAAATCCGGTAAAGGAGGAAGTG  
TGGAGAAAGATGACACCACTCCAAGAGATTCAATGGAAAAGGATAATATTG  
AAAGTAAAGACGAACCCGTTTTCAATTGGGATAAGTATTTTGAGCCGTTTCCA  
TTGTATGTTATAGATGCAAAACAGAGAGGAAATCTTGGAAGGTAAGATCACA  
ATTTTATTCAATAAAAAAATTTTTTAGAGATTTTGCTTTAAATGATAAAAAAT  
GGACAAACCAACCGTTTTGCCTCTTCTTTTGGTTTATCAACCTTTCTCTATGGAA  
AAAATTCTGAAAAATTAACAAACAGTATTTACGTTGAAAAGTGAAGAAAAA  
AGCAAAAAAAGGAAACAAATTTCAAACCGTTCTACTCCATCTTAAAAAAAC  
TAAATTCGTAAAAAGTCATTTGGTATGTTTTGGAGACTATAATACAATTGAG  
AAAATTTGAAAAACCGGCACTCCAAAGATACAATCATAAATTTTCGATAACT  
TTCAGATTCTTGAATCACTCTTGCGATCCGAATGTGCACGTTCAACACGTCAT  
GTACGATACGCATGATCTTCGTCTTCCATGGGTCGCGTTTTTCACACGAAAAT  
ACGTGAAAGCCGGCGATGAGCTAACCTGGGACTATCAATATACTCAAGATCA  
GACGGCTACCACACAACCTCACATGCCACTGCGGAGCTGAAAACCTGCACCGGC  
CGTTTGCTGAAAAGTTAAAGAATTGTTGTTATTTCTTCCCAGTTATGTTTTCC  
TTTTTTTTTAAGTATTTATTTATTTAATTTTTATTTTGTATTGTTCAATC  
GTTTAAATCTCCCTTTGAAAACAGCATCTCATATGTATGATCTAAACACGTA  
TTTACCTCGTAAGGGTTTGCCAAATAGTTTCTTTGGTTTTTCATTTTGATTTTCT  
CTGCGAATAAAATGTTTTAAAAAAGACATTATATTTTTTAATAGTCAGTACAG  
TTTTGATGTCTCCAATCTATTTAGTTTACAATTTTAAATATAGAATATATAT  
ATTAGGTTTTCATAAGTTATGCATCGATTACGGGTTCTACGTCACCTGAAGTT  
CTGCATTTCCACGTCACATAGGACTACTGTAGTTTTTAAAAAATACTCGTTTCA  
TTTGTAAATAATATTCCTTCTACTAGTTTTGCTTCTGGTAATAATCGAATTTCAA  
AACTTTAGCTAAAATATTTCTTTTTGAAGAGGCTGCAGCAAAATATGAAAAG

FIGURE 25

AAAAGTCCAACCTGAACATGTATTACTTCGACCCGATACATATATTGGAGGTG  
TCGCCATGCGAGAAGATCAAATTATTTGGCTCAGAGACTCAGAAAATAGAAA  
AATGATTGCAAAAGAAGTCACTTATCCACCTGGATTATTGAAGATTTTCGATG  
AGATTCTAGTGAATGCGGCTGATAATAAAGCAAGAGATTCCAGTATGAATCG  
GTTGGAAGTATGGTTAGATAGGTAAATATATTGCAGGAATTTATGTTCTGCGA  
CAAAGCTACGATACGCTGTCTCGCCACGACAATTGTTTTGGTAAATGCATGA  
AAATCGACGTGCACCTTTAAATAATACTGTAGTTTTAAATTCTCGTTTCTTCA  
ATTTTTCATAAATGGTTTTCCGATGAATATATGATTTTAAAAAATCTAAAAT  
TCACATTAATTTATAAGAAACAAAATTCCTCAAAAACGAAAGTTTGGCGATA  
CAGTACTATC

Figure 26

LIN(n4256) amino acid sequence

MDQQEPSNNVDTSSILSDDGMETQEQSSFVTATIDLTVDYDETEIQEILDNGKA  
EEGTDEDSDLVEGILNANSQVQALLDAPSEQVAQALNSFFGNESEQEAVAAQRR  
VDAEKTAKDEAELKQQEEAEDLIEDSIVKTDEEKQAVRRLKINEFLSWFTRLLPE  
QFKNFEFTNPNYLTESISDSPVVNVCKEIVKSFKESESLEGLSQKYELIDEDVL  
VAAICIGVLDTNNEEDVDFNVLCDDRIDDWSIEKCVTFLDYPNTGLNSKNGPLRF  
MQFTVTSPASAILMLTLIRLREEGHPCRLDFDSNPTDDLLLNFQVEFSNNIIDTA  
VKYWDDQKENGAAQDKIGRRVLIKLTTVLKNAVGSRNEIIQLVNEKIPDFDGTEA  
AVNESFTSDQRTEINSRAIMETLKAEMKLAIAEAQKVYDTKTDFEKKFFVLTVG  
FCLARANPSDDAELTYAIVQDRVDAMTYKVKFIDTSQIRECNIRDLAMTTQGM  
DPSLNTFGDVGLRVACRQVISSSQFGKKTWLTGTAAAGRRRAHRSDFLIFFDNGT  
DAYVSAPTMPGEPGYEVASEKKSVMFLKEMIAKMNAQAIAIMVGQPVGKEGNL  
DYFLTFHWIRQSHRSAYIRDFMKEFPEWPLLKMPVGMRICLYNSLVDRRKKMVT  
VIGTDRAFAIVRHEAPNPLAPGNRCTDFPCNDRNHQHIDEKIYRGSHRLEGAAHK  
KHMISTNNNLSQRRKDQLQSQFEPTDMIRSMERNHQQVVKKKTGTGNQNVAS  
TNDAKSKREIEIRKKNQFLFNKIIVPIPVLTPLENLKAHAQCGPDCLQKMDADPYE  
ARFHRNSPIHTPLLCGWRRIMYTMSTGKKRGAVKKNIYFSPCGAALHQISDVSE  
YIHVTRSLLTIDCFSDARIDTATYITVDDKYLKVADFSLGTEGIPIPLVNSVDNDE  
PPSLEYSKRRFQYNDQVDISSVSRDFCSGCSCDGDSCDASKCECQQLSIEAMKRL  
PHNLQFDGHDDELYESSEKQNKFLKLFFFRVPHYQNRLLSSKVISGLYECNDQCSC  
HRKSCYNRVVQNNIKYPMHVSLENDTYQLLFFLQIFKTAQSGWGVRAITDIPQ  
STFICTYVGAILTDDLADLRNADQYFADLDLKDTELEKGREHETDFGYGGD  
ESDYDDEEGSDGSDGDDVMNKMVKRQDSSESGETKRLTRQKRKQSKKSGKG  
GSVEKDDTTPRDSMEKDNIESKDEPVFNWDKYFEPFLYVIDAKQRGNLGRFLN  
HSCDPNVHVQHVMYDTHDLRLPWVAFFTRKYVKAGDELTDYQYTQDQTATT  
QLTCHCGAENCTGRLLKS



## Figure 27

*lin-65* genomic sequence (1 kb of upstream and downstream genomic sequence is included in this file)

<u>Exon number</u>	<u>Exon boundaries (inclusive)</u>
1	1001 – 1133
2	4522 – 5208
3	6128 – 6361
4	7962 – 8350
5	8706 – 8928
6	9260 – 9516
7	10328 – 10567
8	11677 – 11700

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AAAAATTTAAAAAAATTTTTAAAAATTCGTGTAAAAATTACCCCGGTTGTTTA
GGAAATAATAAGAGATTAGAGACTTTTTTCAGATTTTTATTTTCTTGAGTTT
TGCCGGTTTTTCAGCCGATTCTATCTTTTTTTCTCATTTTTTG TGATTTTTTT
CGCTAGTTTTCCCCTCAATTTCTCGATTTTTTCACGATTTTTTGAAAATTTTCG
GAAAATTGAATTGTTTGCAAAAAAAAAAATTCAAAAACCGCATTTTTCTCAG
AATTTTTCTGGGATTTTGTACAAATTTTGAATTATTTCTCAAAAAAAGCAG
GTTTTTACCGATTTTTTTGGTTTTTTCCCCAAAATTTTCCGATTTTTTCCGAGTT
TTGCCGGTTTTTCAGCCGAATTCTACTCTCGATTTTTTTACGATTTTTTGGAAT
TTTCGGAAAATTATTTGAAAAAAAAATCAAAAACCGCATTTTTTTTTTCTGAAT
TTTCTGGGATTTTGTACGAAATTTTGAATTTTTCTCGAAAAAAGCAAGTTAT
TCCCCAAAATTTTCTGATTTTCCCCCAAAAATTTAGATTTTTTCCCGAGTTTTCC
CCAGTTCTCAGCTGATTTCTATATTTTTTTCTCAATTTTTGTGATTTTTTGTGTC
TAGTTTTCCCTTCAATTCCTCGAGTTTTTCACGATTTTTTGGAGATTTTCGAAA
AATTGTTTGAAAAAAATCAAGAAACCACATTTTCTCTGGATTTTCTCGAAAT
TTGCACAAAATTTTTGAATTTTTTCGTAAAAAAAACGTTTTCCCCAAAAT
TTCAGATTTGTTTTTGATTTTTTTTCGAGATTTTCCCCTGATTTCAAAGTTTTTTC
CTGAATTTTTCGAATATTTCTGAAAAATCGGCTATTTCTAACTTTTTAAATAA
TTTTTTTTGAATTTCTGACTTTTTAAATCCTTTTTTTTTTTGCCATTTTTTCCCATC
TAAAATTCTAAATTATTCAAAATTTTACAGAATGTCAGAAGTAATCGACGAA
AGTATCTTAAATACAGAAGCTTCAGATGATCCAATACCTCCATTAAATGATG
ATCAGATTGCTGAGCTTTTGGGTGAAGATGGAGAAATTATGGAGATAACTGA
GCAGAAAGGTGAGATTTTTTGAGTAAAACCTTGAATTTTGCATAAAAAATTG
CAATTTTCGCTAAAAATTACCTTAAAACCTCGAAAATTGGAATTTCTAGCTGAG
AAAATGGCCAAAAATGTCGAAAAATGCCTCCGAAACCTGTGAAAAAAAAAAAA
CCACCAAAAAGGTTTCTAGGCCACCAAAAAGATTTCTAGGCCACCAAAAATG
TTTCTAGGCCACCAAAAATGTTTCTAGGCCACCAAAAATGTTTCTAGGCCACC
AAAAATGTTTCTAGGCCACCAAAAATGTTTCTAGGCCACCAAAACAGGTTTCA
ATGCCACCAAAAATGTTTCTAGGCCACCAAAAATGTTTCTAGGCCCCCCAAAA
AATTTTTCTAGGCCACCAAAAAGGTTTCTAGGCCACCAAAAATGTTTCTAGGC
CACCAAAAAGGTTTCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAAAGGT
TTCTAGGCCACCAACCAGGTTTCAATGCCACCAAAAATGTTTCTAGGCCACCA
AAAAGGTTTCTAGGCCACCAAAAATGTTTCTAGGCCACCAAAAATGTTTCTA

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FIGURE 27

GGCCACCAAAAAGGTTTCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAAA  
TGTTTCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAAAGGTTTCTAGGCC  
ACCAAAAAGGTTTCTAGGCCACCAAAAATGTTTCTAGGCCACCAAAAAGGTT  
TCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAAATGTTTCTAGGCCACCA  
AACAGGTTTCAATGCCACCAAAAATGTTTCTAGGCCACCAAAACAGGTTTCAA  
TGCCACCAAAAATGTTTCTAGGCCACCAAAAAGGTTTCTAGGCCACCAAAAA  
TGTTTCTAGGCCACCAAAAATGTTTCTAGGCCACCAAAAAGGTTTCTAGGCCA  
CCAAACAGGTTTCAATGCCACCAAAAATGTTTCTAGGCCACCAAAACAGGTTT  
CAATGCCACCAAAAATGTTTCTAGGCCACCAAAAATGTTTCTAGGCCCCCAA  
AAAATTTTCTAGGCCACCAAAAAGGTTTCTAGGCCACCAAAAATGTTTCTAG  
GCCACCAAAAAGGTTTCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAAAG  
GTTTCTAGGCCACCAACCAGGTTTCAATGCCACCAAAAATGTTTCTAGGCCAC  
CAAAAAGGTTTCTAGGCCACCAAAAATGTTTCTAGGCCACCAAAAATGTTTC  
TAGGCCACCAAAAAGGTTTCTAGGCCACCAAAAAGGTTTCAAGGCCACCAAA  
AAGGTTTCAATGCCACCAAAAATGTTTCTAGGCCACCAAAACAGGTTTCAATG  
CCACCAAAAAGGTTTCTAGGCCACCAAAAATGTTTCTAGACCACCAAAAAGG  
TTTCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAAAGGTTTCTAGGCCAC  
CAAACAGGTTTCAATGCCACCAAAAATGTTTCTAGGCCACCAAAAAGGTTTC  
TAGGCCACCAAAAATGTTTCTAGGCCACCAAAAATGTTTCTAGGCCACCAAA  
AAGGTTTCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAAATGTTTCTAGG  
CCACCAAAACAGGTTTCAATGCCCCCAAAAATTTTCTAGGCCACCAAAAAG  
GTTTCTAGGCCATCAAAAATGTTTCTAGACCACCAAAAAGGTTTCTAGGCCAC  
CAAAAATGTTTCTAGACCACCAAAAAGGTTTCTAGGCCACCAAAAATGTTTC  
TAGGCCACCAAAAAGGTTTCTAGGCCACCAAAAATGTTTCTAGGCCACCAAA  
AAGGTTTCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAAAGGTTTCTAGG  
CCACCAACCAGGTTTCAATGCCACCAAAAATGTTTCTAGGCCACCAAAAAGG  
TTTCTAGGCCACCAAAAATGTTTCTAGGCCACCAAAAATGTTTCTAGGCCACC  
AAAAAGGTTTCTAGGCCACCAAAAAGGTTTCAAGGCCACCAAAAAGGTTTCA  
ATGCCACCAAAAATGTTTCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAA  
AGGTTTCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAAAGGTTTCTAGAC  
CACCAAAAAGGTTTCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAAAGGT  
TTCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAAATGTTTCTAGGCCACC  
AAAAAGGTTTCTAGGCCACCAAAAATGTTTCTAGGCCACCAAAAATGTTTCT  
AGGCCACCAAAAAGGTTTCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAA  
ATGTTTCTAGGCCACCAAAACAGGTTTCAATGCCCCCAAAAATTTTCTAGGC  
CACCAAAAAGGTTTCTAGGCCACCAAAAATGTTTCTAGACCACCAAAAAGGT  
TTCTAGGCCACCAAAAATGTTTCTAGACCACCAAAAAGGTTTCTAGGCCACC  
AAAAATGTTTCTAGGCCACCAAAAAGGTTTCTAGGCCACCAAAACAGGTTTCA  
ATGCCACCAAAAATGTTTCTAGGCCACCAAAAATGTTTCTAGGCCCCCAAAA  
AATTTTCTAGGCCACCAAAAAGGTTTCAATGCCACCAAAAATGTTTCTAGGC  
CACCAAAAAGGTTTCTAGGCCACCAAAAATGTTTCTAGGCCACCAAAAATGT  
TTCTAGGCCACCAAAAAGGTTTCTAGGCCACCAAAACAGGTTTCAATGCCACC  
AAAAATGTTTCTAGGCCACCAAAACAGGTTTCAATGCCACCAAAAAGGTTTCT  
AGGCCACCAAAAATGTTTCTAGACCACCAAAAAGGTTTCTAGGCCACCAAAAC  
AGGTTTCAATGCCACCAAAAAGGTTTCTAGGCCACCAAAACAGGTTTCAATGC  
CACCAAAAATGTTTCTAGGCCACCAAAAAGGTTTCTAGGCCACCAAAAATGT  
TTCTAGGCCACCAAAAATGTTTCTAGGCCACCAAAAAGGTTTCTAGGCCACC  
AAACAGGTTTCAATGCCACCAAAAATGTTTCTAGGCCACCAAAACAGGTTTCA

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Applicant(s): Horvitz et al.  
Filing Date: September 12, 2003 Serial No.: N/A  
Page 81 of 91 Customer No.: 21559

FIGURE 27

ATGCCACCAAAAATGTTTCTAGGCCACCAAAAATGTTTCTAGGCCCCCAAAA  
AATTTTTCTAGGCCACCAAAAAGGTTTCTAGGCCACCAAAAATGTTTCTAGAC  
CACCAAAAAGGTTTCTAGGCCACCAAAAATGTTTCTAGACCACCAAAAAGGT  
TTCTAGGCCACCAAAAATGTTTCTAGGCCACCAAAAAGGTTTCTAGGCCACC  
AAAAATGCTTCTAGGCCACCAAAAATGTTTCTACGCCACCAAAAAGCCGCCTC  
AAGCCCGAAAAATTTGAATTTCCCGCTCAAAAAATCTAAAATTTTCCGATTTT  
CAGACGAATCAGATGATGTGGTGATGCTGGACGACGATGATGACGACACTCC  
GGAACCGATTCTCGTGATTGATATGGATGAGGATGAGGATGTTACTACAGAT  
GGTCTGAATCTCAGGAAGAGCTGGCTGCAGATGCTCCGGCTCCAGGAGCTC  
CAGAAGCTTCAGCTCCAGCTCAAGAAGCCTCAGAAGCTTCAGCTCCGGATCA  
AGAAGCTCCAGAAGTTCAGGATGTTCCGGATTCTTCGGGAGCTCCAGATGCT  
TCAGCTCAGGCTTCAGAGGCTTCTGATGCTTCAGCTCCAGAAGTTCAGGATC  
TACAGAAGCTCAGGATGCTCAGGATGTTCCGGATTCTTTGGGAGCTTCAGAT  
GCTTCAGCTCAAGAAATTCAGAAGCTCCAGAAGCCCCAGAAGCTCCAGAAA  
TCGCCGCTGAAATCGACGAAGAAGTGCTGCTCGCCGAGCAAAAATGGAGTTTT  
GGACGAAGGATTTGATGAGACTGACGATATTATCATAGAAGAAGAAGCTGTA  
GAAGAAGCTGAAGCCGTGGAGCCACCAATTAACACTGAAAATCAGGAAAAC  
GCGCTGGAAATGCTCGAAGAGCGCCTCAAGAAGAATGAAGAAAAGGAAATT  
GTGGAGAAAAGTGATGTGAAGCCAGAGGATGAAGATATTATACATATGGAG  
ACGGATTTCAGTTGAAAGTATGGGCTTTTTTAGCTGGAAAACAGGAAAAAAGA  
GCAAAAAATTGATACATTTCCAGCTTAACCAATCTTTTTTTGAGTTGTAAAGC  
CTGAAAATTGAGATTTTTGTACCAACTTTTATGATAAAGCTGAAAAAAAATT  
AATTTTTTGACGAATTTTTAGCGGAAACCCTGAAAACATGTTTTGTCTGAAAA  
ATACAGAAAATCGTCACTTTTTACAATAAATTCGAGATTTTTAGCTCAAAAAT  
ACAACATTATAGTGCAAAAATCTCAGAAAAAGCCAAAAATTTCAATCAACA  
TCTCAAAAAAAGCAGAAAATTTACTCAAAATATCTCAGAAAAAGCTAAAATT  
TTCCCAAAAAATCCCAGAAAAAGCAGAATTTTCATTCAAAATTTCCAGAAAA  
AGCTGATAATTTACTAAACAATCTCAGAAAATGCTGAAATTTTACTCAAAAG  
TCTTCATAAAAAGCTGAAATTTTACTTTAAAAGTTTAGGAAATGCTGCAATTT  
CACTTAAAAATCCCAAAAAAGCTAAAATTTTCCCAAAAAATCCCAGAAAAAG  
CAGAAATTTTACTCGAATATCTCAAAAAAAGCTGAAATTTCACTCAA  
AAATCCCAGAAAAAGCTAAAAATTTACTAAAAAATCTCAAAAAAAGCTGAAATTTCACTCAA  
CTAAAATTTCACTCAAAAATCTCAGAAAAAGCTAAAATTTTACTCGAATATCT  
CAAAAAAAGCTGAAATTTTCTAAAAAATTTATGAAAAACCGAAATTTT  
ACTTAAAAGTCTCATAAAAAGCCGAATTTTCCCAAAAAAATCCCAGAAAAAG  
CTAAAAATTTACTTTAAAATCTCATCTGTAATTTTAGTTTAAAATCTCAGAAA  
AACCCGAAATTTCTCTCAAAAATTTGCTGATTTTCAAATTTTACGCGTCAAGC  
CGCAAACGTACTGGCGGAGCCACAAGTCCGCGGAGCCCGGCTCAAAAACGA  
CCAAAACGACGTGTTCAAACGTTATTAAAGATGCGTCAGAATGCAATTGAAC  
TATTGACACGACTTTATGGCTCATGGGATGCACAATTGAGCCTCTCAAATCTT  
GAGACAATTCGATTGTTGGGTGTCAATAATAATAGGAAGCTTATCGAAATTTT  
TGAGGAGAATGAGCAAGGTTAAAGCGTTTTTAAATGCTATGAAAACCTGACAA  
ATTTTCGATAAAAAAAGGATTTTTGGAAGAAAATCGCCTGAAAATTCATGT  
TTTTCTGCAAATTTTGACCAAATTTCCCAAGAAAAATACGATTTTTTAGTCCGA  
AAATCCTCCAAAAAGATTTCTAGGCCACCAAAAAGGTTTCTAGGCCACCAAG  
AAAGTTTCTAGGCCACCAAGTATTTATAGGCCACCTAAGATGTTTCTAGGCC  
ACCTGAGATGTTTCTAGGTCACCAAAAATGTTTCTCGGTCACCAAAAATGTTT  
CAAGGCCACCGAAAAGGTTTCTAGGCCACCTAAGTATTTCTAGGCCACCTAA

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GENES THAT ANTAGONIZE LET-60 RAS SIGNALING  
Applicant(s): Horvitz et al.  
Filing Date: September 12, 2003 Serial No.: N/A  
Page 82 of 91 Customer No.: 21559

FIGURE 27

GATGTTTCTAGGCCACCTGAGATGTTTCTAGGTCACCAAAAATGTTTCTAGGT  
TACCAAAAATGTTTCAAGGCCATCGAAAAGGTTTCTAGGCCACCAAAAGTATT  
TCTAGGCCACCTAAGATGTTTCTAGGCCACCTGAGATGTTTCTAGGTCACCAA  
AAATGTTTCAAGGCCACCGAAAAGGTTTCTAGGCCACCAAAAAGGTTTCTAG  
GCCACCAAAAATATTTCTAGGCCACCTAAGATGTTTCTAGGCCACCTGAGAT  
GTTTCTAGGCCACCTGAGATGTTTCTAGGCCACCTGAGATGTTTCTAGGTCAC  
CAAAAATGTTTCTCGGTCACCAAAAATGTTTCAAGGCCACCGAAAAGGTTTCT  
TAGGCCACCTAAGTATTTCTAGGCCACCTAAGATGTTTCTAGGCCACCTGAGA  
TGTTTCTAGGTCACCAAAAATGTTTCTAGGTTACCAAAAATGTTTCAAGGCCA  
TCGAAAAGGTTTCTAGGCCACCAAAAGTATTTCTAGGCCACCTAAGATGTTTCT  
AGGCCACCTGAGATGTTTCTAGGTCACCAAAAATGTTTCAAGGCCACCGAAA  
AGGTTTCTAGGCCACCAAAAAGGTTTCTAGGCCACCAAAAATATTTCTAGGC  
CACCAAAAATGTTTCTAGGTCACCAAAAATGTTTCTAGGTCACCAAAAATGT  
ATCAAGGCCACCAAAAAGGTTTCTAGGTCACCAAAAATGTTTCTAGGCCACC  
AAAAATGTTTCTAGGTCACCAAAAATGTTTCTAGGCCACCAAAAAGGTTTCT  
AGGCCACCAAAAAGGTTTCTAGGCCACCAAAAAGGTTTCTAGGCCACCAAAA  
AGGTTTCAAGGCCACCAAAAAGGTTTCTAGGCCACCAAAAATGTTTCTAGGT  
CACCAAAAATGTTTCTAGGCCACCAAAAGTATTTCTAGGCCACCTAAAAGGTTT  
CTAGGCCATCAAAAAGGTTTCTAGGCCATCAAAAAGGATTCTAGGCCACCAA  
AAATATTTCTAGGCCACCTAAGATGTTTCTAGGCCACCAGAGTATTTCTAGGC  
CACCTAAGAGGTTTCTGGGCCATCAAAAAGGTTTCAAGTCCATCAAAAAGGT  
TTCTAGGCCACCAAAAAGGTTTCTAGGCCACCGAAAAGGTTTCTAGGCCACC  
AAAAAGGTTTCTAGACCACCTAAGACATTTCTAGGCCAACAAAAAGGTTTCT  
AGGCCACCAAGAAAGCCGAAAAAAGTGTCTCAAATTCGAATTTTGCAGTGCTCA  
AACAAAAAGTGTCGCACTGACAGAAGAGCTGAAAAAGGAGAAGCTGGCTC  
ACGCGGGAACCCGTTTCAGCATTGAAAGAATTGACTAATGAAATAACTGGAAT  
GCGTGTACAAATGAATAAACTACGTTCAATGGTCACTCAGCCTACGACTTCG  
AAAATTATTGATAGTTTTGTTCAACGTCATCAGGCTTTCGAGCAGCAACAACA  
ATTCCAACACCAACACCACCAACACCGACCAATAATGTTGGCTCCACGTCAT  
CATCCGCCGCCGCCCGCCGATTTTACACCGAATCAACGGGCGGCGGCTCCGT  
ATCATCCGAATATGGTTCAACCGAATCGTCTTGCTGCTATGCCACATAGAAGA  
CCGATTATTGGAATGCAGGTGAAAATGGAATGCCATGAAAATTTCCGGCCCGG  
AAAATTTTGAAAAATCCTCTAAATTTTCAATATTTGTGCAAAAAATCTGACAA  
AAATCGTGTCAAAATTCAGATTTCCGGGAGAAAAATCGCATTTTGTAGTAAA  
AATTTCGAAGAAAAGCGTCTTAAATTCTAGATTTATTAGTTAAAATTTTTTCA  
AATTTTAGTCAAGAAAATTAAGAAAAATGCGAAAATTTTCGAGCAAAAAATAT  
AGTTTTTTGGAGCCGAAATTGTGAAAAATGCGATTTTTTTTCGAAAAATCTGGA  
CAAAAAATTTCAAACAAGAAAAACCACTTTTTTAAAAAAATTTTCACACAAT  
TTCCAGCAACAAAATTCGGCTCCACCACAATTCAACGGTCACCAAGCTCTCGT  
CCCATCACCTCAATCATCATCTGCATTTTCTCGTCCACCACCAACTCAACTTG  
CAACACAGAGAAGAGCTCCACCATTGGCAAGTACCGGCCTTCCGGCAACAGT  
CAGATGGGAAGCAATTCACCGCCAAAAAATCCGAATGTCGGGCACAATGA  
GCCACCGCTTAACAATGGAGGTTTCGTGCTGTGCAACAAAAAGAGCACCGCTT  
TTCCACGACGAGTTTTTTCGATGATGATTTTGGTGTGAAAATTGAAAAACTCA  
TTTTTTTAAAGTCTGAAATTTGAAAATTTGAGAAAAGTTTTTTAAAAAAAGTT  
TTATGAGGGATTTTCTGACAATTTTTTATAAACGGAAAATTACGAAAACCTCCA  
AAATTTGTGTTCTTTTCGGAACGAATTTGAAATTTGAACCAAAATTTTGACA  
ATTTTCTGGGGATTTTTGACTGGAAATTCGTTTTTCATCGATTTTTCCTCCTTT

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Applicant(s): Horvitz et al.  
Filing Date: September 12, 2003 Serial No.: N/A  
Page 83 of 91 Customer No.: 21559

FIGURE 27

AATTTTCGGTAAAACCCCTGTCTCCAATTCCAGGCCGTGCACAGCCACTAATC  
GATAATACACGTGTACACGACAATAACAATTATGCTGTGTGTACCACTTGTCTC  
CACTGCAAATACAATATCATCGGGCGATTTCGACACGTCTACCAAAAGTACCA  
CGAATCTACGAGAATCTCACGGCAAATCCCGATTGAGTGTGACGATTCATTC  
GAGTGCACAGGATTTCCGAGAGAATTATCAAATTGGTGGAAAGATTAACTAT  
GAATATCTCGGAGGATTTGATCAATATGTAGGTGATGATGTTTTTTTTATTGAG  
AGATAAATACGAAATTCCATTACAATCGATATTTTTTGAAGTAAAAATGTCTG  
AAAAATCAAAAATTTTAGCTAAAAATTGAGAATATTTTTGTTTAAAAAAAT  
CATTGAAATTGATTTTTTTTTATTCCATAAAAAATCTCGGAAAAGTCAATTTTC  
AGTCATAAATCTTCTGAAAATTATCCAAACAATGGGATTTTCTGAAATTTTAG  
CTTAAAAATTGAGGATTTCCCGGTTTTTTCAGAGAAATTCCATTACAATCGAT  
TTTTTTACTGAAAAATCCTCTGGAAATTAACAAAAACCAAATAAAAATGCCCT  
AATTTTTTTTTTAAATCCAAAAATTGTTGGATTTTTTTCAGAAAAAAATATTTTTT  
CAATTGACTGGTGTCCAAAAAATATAGAAAATTCAAATTTTCCAAGAAAAAT  
AGCCAAAAAAATGTAATTTTTGTCTAACAAAAAAATTGAATAGCGCAAAATT  
AAATTGTCGTTTTTTTTAATTTCCCTCCGGTTTTGAAAGGAAAAAATTCCATA  
AAAATCGAAATTTTTTGAAGTAAAAATCCATGAAAACCTCGAATTTTGAGTCA  
AAAATCCTCTGAAAATGCTCCAAAATATGAGATTTTCTGAAATTTTCATCAAAA  
ATTAAGAATTTACGGTTTAAAAAAATTCATTAAAATCGATATTTTTCAAG  
TGAAAAATCTCTGGAAAACCTCGATGTTTGAGTCAAAATTCGTCTGAAAATGC  
TCCTTTAAATTGAAAAATTGAAAAAAAACCGCCCAACAATTTTGCAGAATA  
TCCAAGTGTTCTGCAAGTGTCTCTTAAATTCAGTGAATGAACGGTTAC  
CCGGATCCAGAAGATCGTATATCAATTGACTGGGGATGCTCGAAATTGTGGC  
CTTGTAAGCCGAAATCTCATCAAAATTCGGTGTACGCTTCCATCAAGCACAA  
CTGCTGCCGAAGAACGATCGAATTACGATTGTGGCTGTGGCGAAGGATAAAA  
CTAGCGGAATTATTCACATTTTCGCAGGTGAAAAATTGGAAAATTTGCACAAA  
TCCAGACAAAAAAACTGAAAAATCGAAAAAATTTTTGTAATTTTTTGCCGA  
AAACGAAAATTA AAAA ACTGATAAAAATTGATTTTTTAACCGGAAAATCCCTGA  
AAAATCAAACATTTTTTGCTAAAAATTGAGAATTATACGGTTTTGGGTAAAA  
AAAAACTATTTAAAAAAATATTTTTTCTTTAAAAATCTCAACAAAAAAA  
ACCAATTTTCATTTCAGAAATCCCCCGGAGAATTGTCAAAATTTTGGGAATAC  
TCTGAAATTTTCGATAAACACCTCATTTTTTGATTAAAATTGATTTTTTAACTGA  
AAAATCCCTTA AAAA AC GAATATTTTAGTTTTTCAAAAAAAATGTGCAATT  
TATCTGAAATTTTCAGCAAAAAAAATGAAAAAAAATTCGGAAATTA AAA  
ACTGATAAAAATCGATTTTTTACTTGAAAAATTCGTGAAAAATCAAACACATT  
TTTGCTAACCATTTGAGAATATTACGATTTTGTGAAAAAAAACCATTA AAA  
TTGATTTTTTATTCCTAAAAAATGCCAGAAAAATCAATTTTCAGTCAAAAATC  
ACCGGAAAATTATCAAATTTTGAAGTTTTCTGTGAAATTTCAAGCTGAAATT  
TCCATTTTTGAATAAAAAAAATGTGGCTGGATTTAAAAAAAACCATTA AAA  
TTGATTTTTTAACTGAAAAATCCGTATTTCTCTGAAATTTTCAGGCAAAAAATG  
TCATTTCCGAAATTA AAAA ATTGCGACAAAATCAAATAAAAATTGATCAAAATT  
GCAAAAAAAAACCTTTTCGCAAAAAATCCTTAAAATTTACATTTTTCAAC  
AAAAACTCGAATTTTCAGTCAAAAATTCGTCTGAAAATGCTCCAAAATATGG  
GATTTTTTGAATTTTAGCTAAAAATTGAGAATTGCACGGTATTTAGAGAGGG  
AAAAATTCATAAAAAATCGATATTTTCTCTTTAAAATCTCGAAAAAAATCAT  
CAATTTTCATTCAAAAATCCCCCGGAAAATTGTCAAAATTTTGAGATTTTT  
CTGAAATTTACGCAAAAATTTTCATTTTTTTCAGCCACCTTCATCACTCTCGA  
ATGATCGATCTCTTCACGTCAAATGCACTTTTTTCTGGATTTTTTTGTAAAAA

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Applicant(s): Horvitz et al.  
Filing Date: September 12, 2003 Serial No.: N/A  
Page 84 of 91 Customer No.: 21559

FIGURE 27

ATTTGAAATTCTCGTGTTTTTCTTCTGAAAAATTGCTTTTTTTGATTTTTCTG  
TAATTTTTTTTTGTTGATTTTCTTAATTTTTTAATTTTCAAAAAATCTTTTC  
ATCTCTTCTCTCTCTCTCTGAATCTCAATTTTTTCTGAATTTCCCCGTTTTT  
TCTGATAATTTTCAATATTTCTCTGAATTTTTCTATTCCCCCGTTGTAATGCC  
AAAATATGTGGTAATTTCTCCCCATTTTTTCGCTTTATTACTATTTATTCTATT  
CAATTGGTGCCTCTCTCAATGTGTTGTATGAAAAACACTGTTTTATGGAGGTT  
TTGGAGAATTTTGAATTTTTTCGTCTGATTTTTATTGGTTTTCTTTACCAATT  
CAATTTTTTTTTTAATTCGAAAATTTGTAGAAATTCATTTTGTAGCTTAAAAA  
ATTAAAAATTGAGAAAATTTGTTCAAAAATGGCAAAGTTTTCGAAATTTTAGT  
CTAAAAAAGATTTTTTTAATATAGAATTTTAAAAAATTAGCACAGAAAAAT  
GCCGAAAAATTCGTAATTTTTTCATTTAAAAATGAAAAAAAAAAAAACAAAA  
AAAAAAAAAAAAAAGAGGGGAAAAATCCCATTAAGTAGTTTTTTGACTGC  
AAAATCGTCTGGAAATTAACAAAATTTAAAAAATCTTTTTTACAGCCCATCG  
TTTCCAAAAACCAATAAAATGCCAAAAAAAAAATTTTTATGCAAAAATTCTG  
GATTTTTTTCCGATTTTTTCAAAAAATCCCCCTTCTAAAAAATGGTGAAT  
TTGTTCCCAAAAACCCAAAATTTGAGATTTTCTAAAATTTTGGCAAAAATTAA  
GAATTCACGGTTTTGAGAGGGGAAAACTCCATTAATTTGATGATTTTATGA  
CTAAAAATTCCTAAAAAATCAATTTTCAGTCAAAAATTAAATTT

**Figure 28**

MSEVIDESILNTEASDDPIPLNDDQIAELLGEDGEIMEITEQKDESDDVVMLDDD  
DDDTPEPILVIDMDEDEDVTTDGPESQEELAADAPAPGAPEASAPAEASEASAP  
DQEAPEVQDVPDSSGAPDASAQASEASDASAPEVPGSTEAQDAQDVPDSLGLASD  
ASAQEIPEAPEAPEAPEIAAEIDEEVLLAEQNGVLDEGFDETDDIIIEEEAVEEAEA  
VEPPINTENQENALEMLEERLKKNEEKEIVEKSDVKPEDEDIIHMETDSVETSSRK  
RTGGATSPRSPAQKRPKRRVQTLLKMRQNAIELLTRLYGSWDAQLSLSNLETIRL  
LGVNNNRKLIEFEENEQVLKQKVSALTEELKKEKLAHAGTRSALKELTNEITGM  
RVQMKNKLRSMTQPTTSKIIDSFVQRHQAFEQQQQFQHQHHQHRPIMLAPRHP  
PPPHFTPQNQRAAAPYHPNMVQPNRLAAMPHRRPIIGMQQQNSAPPQFNHQAAL  
VPSPQSSSAFSRPPPTQLATQRRAPPLASTGLPATVRWEAIPPKNPVGHNEPPL  
NNGGRAQPLIDNTRVHDNTIMLCVPLVSTANTISSGDSTRLPKVPRIYENLTANPD  
LSVTIHSSAQDFRENYQIGGKINYEYLGGFDDQYNIQVFVQVSSLKFTGMNGYPDP  
EDRISIDWGCSKLWPCKPKSHHKFRVRFHQAQLLPKNDRITIVAVAKDKTSGIIHI  
SQPTFITLE

Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE *LET-60* RAS SIGNALING  
Applicant(s): Horvitz *et al.*  
Filing Date: September 12, 2003 Serial No.: N/A  
Page 86 of 91 Customer No.: 21559

Figure 29

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1  aaggaattag actctttatc taaagtgaag aatgatcaat taagaagttt ttgtcccata
61  gaattaaata taaatggatc tcttggggca gaatctgatt tggcaacatt ttgcacttct
121 aaaactgatg ctgttttaat gacttctgat gatagtgtga ctggatcgga attatcccct
181 ttggtcaaag catgcatgct ttcatacaat ggatttcaga atattagtag gtgcaaagaa
241 aaagacttgg atgatacctg catgctgcat aagaagtcag aaagccatt tagagaaaca
301 gaacctctgg tgtcaccaca ccaagataaa ctcagtctta tgccagttat gactgtggat
361 tattccaaaa cagtagttaa agaaccagtt gatacgaggg tttcttgctg caaaacaaaa
421 gattcagaca tatactgtac tttgaacgat agcaaccctt ctttgtgtaa ctctgaagct
481 gaaaaatattg agccttcagt tatgaagatt tcttcaaata gctttatgaa tgtgcatttg
541 gaatcaaaac cagttatatg tgatagtaga aatttgacag atcactcaaa atttgcattg
601 gaagaatata agcagagcat cggtagcact agttcagctt ctgttaatca ttttgatgat
661 ttatatcaac ctattgggag ttcagggtatt gcttcattct ttcagagtct tccaccagga
721 ataaagggtg acagtctaac tctcttgaaa tgcggagaga acacatctcc agttctggat
781 gcagtgtctaa agagtaaaaa aagttcagag tttttaaaagc atgcagggaa agaaacaata
841 gtagaagtag gtagtgacct tcttgattca ggaaagggat ttgcttccag ggagaacagg
901 cgtaataatg ggttatctgg gaaatgtttg caagaggctc aagaagaagg gaattccata
961 ttgcctgaaa gaagaggaag accagaaatc tctttagatg aaagaggaga aggaggacat
1021 gtgcatactt ctgatgactc agaagttgta ttttcttctt gtgatttgaa ttaaccatg
1081 gaagacagtg atggtgtaac ttatgcatta aagtgtgaca gtagtgggtc tgccccagaa
1141 atttgttcta cagttcatga agattattct ggctcttctg aaagttcaaa tgatgaaagt
1201 gattcagaag atacagattc ggatgatagc agtattccaa gaaaccgtct ccagtctgtt
1261 gtggttgatg caaagaattc tactttgccc atggaagaaa caagtccttg ttcttctcgg
1321 agcagtcaaa gttatagaca ctattctgac cattgggaag atgagagatt ggagtcaagg
1381 agacatttgt atgaggaaaa atttgaaagt atagcaagta aagcctgtcc tcaaactgat
1441 aagtttttcc ttcataaagg aacagagaag aatccggaaa tttcttttac acagtcagat
1501 agaaaaaaaa tagataaccg cctgcctgaa ctttctcatc ctcagagtga tggggttgat
1561 agtacaagtc atacagatgt gaaactctgac cctctgggtc acccaaatc agagaaaacc
1621 gtgaaagcca aaataccttc taggcagcaa gaagagctgc caatttatc ttctgatttt
1681 gaagatgtcc caaataagtc ttggcaacag accactttcc aaaacaggcc agatagtaga
1741 ctgggaaaaa cagaattgag tttttcttcc tcttgtaga taccacatgt ggatggcttg
1801 cactcatcag aagagctcag aaacttaggt tgggacttct ctcaagaaaa gccttctacc
1861 acgtatcagc aacctgacag tagctatgga gcttggtgtg gacacaagta tcagaaaaat
1921 gcagaacagt atggtgggac acgtgattac tggcaaggca atggttactg ggatccaaga
1981 tcaggtagac ctcttggaac tggggttggt tatgatcgaa ctcaaggaca agtaccagat
2041 tccctaacag atgatcgtga agaagaggag aattgggatc aacaggatgg atccccattt
2101 tcagaccagt ccgataaatt tcttctatcc cttcagaaaag acaaggggtc agtgcaagca
2161 cctgaaataa gcagcaattc cattaaggac actttagctg tgaatgaaaa gaaagatttt
2221 tcaaaaaact tagaaaaaaa tgatatcaaa gatagagggc ctcttaaaaa aaggaggcag
2281 gaaatagaga gtgattctga aagtgatggt gagcttcagg acagaaagaa agttagagtg
2341 gaggtagagc agggagagac atcagtgcc ccagggtcag cactggttgg gccctctgt
2401 gtcattgatg acttcaggga cccacagcga tggaaaggaat gtgccaagca agggaaaatg
2461 ccattgttact ttgatcttat tgaagaaaat gttattttaa cagaaagaaa gaagaataaa
2521 tctcatcgag atattaagcg aatgcagtgt gagtgtacac ctctttctaa agatgaaaga
2581 gctcaagggtg aaatagcatg tggggaagat tgtcttaate gtcttctcat gattgaatgt
2641 tcttctcggt gtccaaatgg ggattattgt tccaatagac ggtttcagag aaaacagcat
2701 gcagatgtgg aagtcatact cacagaaaag aaaggctggg gcttgagagc tgccaaagac
2761 cttccttcga acacctttgt cctagaatat tgtggagagg tactcgatca taaagagttt
2821 aaagctcgag tgaaggagta tgcacgaaac aaaaacatcc attactattt catggccctg
2881 aagaatgatg agataataga tgccactcaa aaaggaaatt gctctcgttt catgaatcac
2941 agctgtgaac caaattgtga aacccaaaaa tggactgtga acggacaact gaggggttggg
3001 ttttttacca ccaaactggg tcttccaggc tcagagttaa cgtttgacta tcagttccag
3061 agatatggaa aagaagccca gaaatgtttc tgcggatcag ccaattgccg ggggtacctg
3121 ggaggagaaa acagagtcag catcagagca gcaggaggga aaatgaagaa ggaacgatct
3181 cgtaagaagg attcagtgga tggagagcta gaagctctga tggaaaatgg tgagggtctc
3241 tctgataaaa accaggtgct cagcttatcc cggctaattg ttagaattga aactttggag

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FIGURE 29

```

3301 cagaaactta cctgtctgga actcatacag aacacacact cacagtcctg cctgaagtcc
3361 tttctggaac gtcattgggt gtctttgttg tggatctgga tggcagagct aggtgacggc
3421 cgggaaagta accagaagct tcaggaagag attataaaga ctttggaaac cttgccatt
3481 cctactaaaa atatgttgga ggaaagcaaa gtacttccaa ttattcaacg ctgggtctcg
3541 actaagactg ctgtccctcc gttgagtgaa ggagatgggt attctagtga gaatacatcg
3601 cgtgctcata caccactcaa cacacctgat ccttccacca agctgagcac agaagctgac
3661 acagacactc ccaagaaact aatgtttcgc agactgaaaa ttataagtga aaatagcatg
3721 gacagtgcaa tctctgatgc aaccagtggg ctagaaggca aggatggcaa agaggatctt
3781 gatcaattag aaaatgtccc tgtagaggaa gaggaagaat tgcagtcaca acagctactc
3841 ccacaacagc tgcctgaatg caaagttgat agtgaaacca acatagaagc tagtaagcta
3901 cctacatctg aaccagaagc tgacgtgaa atagagctca aagagagcaa cggcacaaaa
3961 ctagaagaac ctattaatga agaaacacca tccaagatg aagaggaggg tgtgtctgat
4021 gtggagagtg aaaggagcca agaacagcca gataaaacag tggatataag tgatttggcc
4081 accaaactcc tggacagttg gaaagacctt aaggagggtat atcgaattcc aaagaaaagt
4141 caaactgaaa aggaaaacac aacaactgaa cgaggaaggg atgctgttgg cttcagagat
4201 caaacacctg ccccgaagac tcctaatagg tcaagagaga gagaccaga caagcaaact
4261 caaaataaag agaaaaggaa acgaagaagc tccctctcac caccctcttc tgcctatgag
4321 cggggaacaa aaaggccaga tgacagatat gatacaccaa cttctaaaaa gaaagtacga
4381 attaaagacc gcaataaact ttctacagag gaacgccgga agttgtttga gcaagagggtg
4441 gctcaacggg aggtcagaa acaacagcaa cagatgcaga acctgggaat gacatcacca
4501 ctgccctatg actctcttgg ttataatgcc ccgcatcatc cctttgctgg ttaccacca
4561 ggttatccca tgcaggccta tgtggatccc agcaacccta atgctggaaa ggtgtcctg
4621 cccacacca gcatggacc agtgtgttct cctgtcctt atgatcatgc tcagcccttg
4681 gtgggacatt ctacagaacc cctttctgcc cctccaccag taccagtgtg gccacatgtg
4741 gcagctcctg tggaaagttc cagttccag tatgtggcc agagtgtggt tgtagtacac
4801 caagactcca gcgttgctgt cttgccagt ccggcccccg gccagttca gggacagaat
4861 tatagtgttt gggattcaaa ccaacagtct gtcagtgtac agcagcagta ctctcctgca
4921 cagtctcaag caaccatata ttatcaagga cagacatgtc caacagtcta tgggtgtgaca
4981 tcaccttatt cacagacaac tccaccaatt gtacagagtt atgccagcc aagtcttcag
5041 tatatccagg ggcaacagat ttacacagct catccacaag gagtgggtgt acagccagcc
5101 gcagcagtga ctacaatagt tgcaccaggg cagcctcagc ccttgagcc atctgaaatg
5161 gttgtgacaa ataatctctt ggatctgccg cccccctctc ctcccaaacc aaaaaccatt
5221 gtcttacctc ccaactggaa gacagctcga gatccagaag ggaagattta ttactaccat
5281 gtgatcacia ggcagactca gtgggatcct cctacttggg aaagcccagg agatgatgcc
5341 agccttgagc atgaagctga gatggacctg ggaactccaa catatgatga aaaccccatg
5401 aaggcctcga aaaagcccaa gacagcagaa gcagacacct ccagtgaact agcaaagaaa
5461 agcaaagaag tattcagaaa agagatgtcc cagttcatcg tccagtgcct gaacccttac
5521 cgaaaacctg actgcaaagt gggaagaatt accacaactg aagactttaa acatctggct
5581 cgcaagctga ctacgggtgt tatgaataag gagctgaagt actgtaagaa tcttgaggac
5641 ctggagtgca atgagaatgt gaaacacaaa accaaggagt acattaagaa gtacatgcag
5701 aagtttgggg ctgtttacaa acccaaagag gacactgaat tagagtgact gttgggccag
5761 ggtgggagga tgggtggtca ggtaagacag actctagggg gaggaatcc tgtgggcctt
5821 tctgtccac ccctgtcagc actgtgctac tgatgataca tcaccctggg gaattcaacc
5881 ctgcagatgt caactgaagg ccacaaaat gaactccatc tacaagtgat tacctagtgtg
5941 tgagctgttg gcatgtggtt agaagccatc agaggtgcaa gggcttagaa aagaccctgg
6001 ccagacctga ctccactctt aaacctgggt cttctccttg gcggtgctgt cagcgcacag
6061 acccatgcgc atccccaccc acaacctttt accctgatga tctgtattat attttaatgt
6121 atatgtgaat atattgaaaa taatttgttt tttcctgggt tttgtttggt tttcgttttg
6181 cttttagcct ctacatgcta ggatcacagg aagactttgt aaggacagtt taagttctcc
6241 tgcaagggtt aatttgttat catgtaataa ttccaaagca ggctgccttg tgggtttggc
6301 cagccttgtg ctatgttgat aagattgatt tactgttaa aatcacttta ctttatccaa
6361 tttttactga actttttatg taaaaaata aatcaatta aag

```

Figure 30

KELDSLKVKNDQLRSFCPIELNINGSPGAESDLATFCTSKTDAVLMTSDDSVTGSELSPLVKACMLSSNG  
FQNISRCKEKDLDDTCMLHKKSESPFRETEPLVSPHQDKLMSMPVMTVDYSKTVVKEPVDTRVSCCKTKDS  
DIYCTLNDSNPISLCNSEAENIEPSVMKISSNSFMNVHLESKPVICDSRNLTDHSKFACEEYKQSIGSTSSA  
SVNHFDDLYQPIGSSGIASSLQSLPPGIKVDLSLTLKCGENTSPVLDAVLKSKKSSEFLKHAGKETIVEVG  
SDLPDSGKGFASRENNRNNGLSGKCLQEAQEEGNSILPERRGRPEISLDERGEGGHVHTSDDSEVVFSSCD  
LNLTMEDSDGVTYALKCDSSGHAPEIVSTVHEDYSGSSESSNDESSEDTSDDSSI PRNRLQSVVVVPKN  
STLPMEETSPCSSRSSQSYRHYS DHWEDERLESRRHLYEEKFESIASKACPQTDKFFLHKGT EKNPEISFT  
QSSRKQIDNRLPELSHPQSDGVDSTSHTDVKS DPLGHPNSEETVKAKIPSRQQEELPIYSSDFEDV PKNKSW  
QQTTFQNRPD SRLGKTELSFSSSCEIPHVDGLHSSEELRN LGWDFSQEK PSTTYQQPDSSYGACGGHKYQQ  
NAEQYGGTRDYWQNGYWDPRSGRPPGTGVVYDRTOGQVPDSLTDREEEENWDQQDGS HFSQSDKFLLS  
LQDKGVSQAPEISSNSIKDTLAVNEKKDFSKNLEKNDIKDRGPLKKRRQEIESDSES DGE LQDRKKVRVE  
VEQGETSVPPGSALVG PSCVMDDFRDPQRWKECAKQGMPCYFDLIEENVYLTERKKNKSHRDIKRMQCEC  
TPLSKDERAQGEIACGEDCLNRLLMIECSSRCPNGDYCSNRRFORKQHADV EILTEKKGWGLRAAKDLPS  
NTFVLEYCGEVL DHKEFKARVKEYARNKNIHYYFMALKNDEIIDATQKGNC SRFMNHSCEPNCETQKWTVN  
GQLRVGFFTTKLVP SGSELTFDYQFQRYGKEAQKCFCSANCRGYLGGENRVSIRAAGGKMKKERSRK KDS  
VDGELEALMENEGELSDKNQVLSLSRLMVRIETLEQKLTCL ELIQNTHSQSCLKSFLERHGLSLLWIWMAE  
LGDGRESNQKLQEEIIKTLEHLPIPTKNMLEESKVLPIIQRWSQTKTAVPPLSEGDGYSENTSRAHTPLN  
TPDPSTKLSTEADTDTPKKLMFRRLKIISENSMDSAISDATSELEGKDGEDLDQLENV PVEEEELQSQQ  
LLPQQQLPECKVDSETNIEASKLPTSEPEADAEIELKESNGTKLEEPINEETPSQDEEEGVSDVESERSQEQ  
PDKTVDISDLATKLLDSWKDLKEVYRIPKKSQTEKENTTTERGRDAVGFRDQTPAPKTPNRSRERDPDKQT  
QNKEKRKRSSSLSPSSAYERGTRKRPDDRYDTPTS KKKVRIKDRNKLSTEERRKLF EQEVAQREAQKQQQQ  
MQNLGMTSPLPYDSL GYNAPHHPFAGYPPGYPMQAYVDPSPNPAGKVLLPTPSMDPVCSPAPYDHAQPLVG  
HSTEPLSAPPPVPVPHVAAPVEVSSSQYVAQSDGVVHQDSSVAVLPVPAPGPVQGQNYSVWDSNQSVSV  
QQQYSPAQSQATIIYYQGQTCPTVYGVTSPYSQTTPIVQSYAQPSLQYIQGQQIFTAHPQGVVVQPAAVT  
TIVAPGQPQLQPSEMVTNNLLDLPPSPPKPKTIVLPPNWK TARDPEGKIYYYHVITRQTQWDPPTWES  
PGDDASLEHEAEMDLGTPTYDENPMKASKPKTAEADTSSELAKKSKEVFRKEMSQFIVQCLNPYRKPDCCK  
VGRITTTEDFKHLARKLTHGVMNKELKYCKNPEDLECNENVKHKTKEYIKKYMQKFGAVYKPKEDTELE

Confidently predicted domains, repeats, motifs and features:

name	begin	end	E-value
<u>Pfam:AT hook</u>	47	60	1.80E+01
<u>low complexity</u>	230	243	-
<u>low complexity</u>	327	338	-
<u>low complexity</u>	371	400	-
<u>low complexity</u>	505	530	-
<u>coiled coil</u>	549	621	-
<u>AWS</u>	636	682	8.80E-18
<u>SET</u>	683	811	6.00E-41
<u>PostSET</u>	812	828	7.40E-04
<u>low complexity</u>	1080	1093	-
<u>low complexity</u>	1118	1129	-
<u>low complexity</u>	1138	1158	-
<u>low complexity</u>	1271	1287	-
<u>VWV</u>	1361	1393	4.10E-08
<u>low complexity</u>	1447	1468	-
<u>low complexity</u>	1469	1497	-

These features and domains are not shown in the diagram, either because their scores are less significant than the required threshold, or because they overlap with some other source of annotation:

name	begin	end	E-value	reason
<u>low complexity</u>	36	50	-	overlap
<u>low complexity</u>	532	554	-	overlap
<u>low complexity</u>	569	615	-	overlap
<u>Pfam:SET</u>	677	811	8.80E-48	overlap
<u>low complexity</u>	734	739	-	overlap
<u>Pfam:VWV</u>	1362	1391	1.90E-08	overlap

Figure 31 LIN(n3628) Functional domains

**Confidently predicted domains, repeats, motifs and features:**

name	begin	end	E-value
<u>low complexity</u>	387	411	-
<u>low complexity</u>	435	449	-
<u>AWS</u>	845	900	7.50E-30
<u>SET</u>	901	1024	3.10E-41
<u>PostSET</u>	1025	1041	2.50E-05
<u>low complexity</u>	1262	1286	-
<u>low complexity</u>	1333	1344	-
<u>low complexity</u>	1425	1437	-
<u>coiled coil</u>	1468	1491	-
<u>low complexity</u>	1569	1589	-
<u>low complexity</u>	1605	1619	-
<u>low complexity</u>	1622	1643	-
<u>low complexity</u>	1690	1710	-
<u>VWV</u>	1741	1773	2.10E-11

These features and domains are not shown in the diagram, either because their scores are less significant than the required threshold, or because they overlap with some other source of annotation:

name	begin	end	E-value	reason
<u>Pfam:SET</u>	895	1024	6.30E-52	overlap
<u>low complexity</u>	1477	1493	-	overlap
<u>low complexity</u>	1726	1744	-	overlap
<u>Pfam:VWV</u>	1742	1771	6.90E-12	overlap

**Figure 32 KIAA1732 Domains**

Title: RB PATHWAY AND CHROMATIN REMODELING  
GENES THAT ANTAGONIZE *LET-60* RAS SIGNALING

Applicant(s): Horvitz *et al.*

Filing Date: September 12, 2003 Serial No.: N/A

Page 91 of 91

Customer No.: 21559